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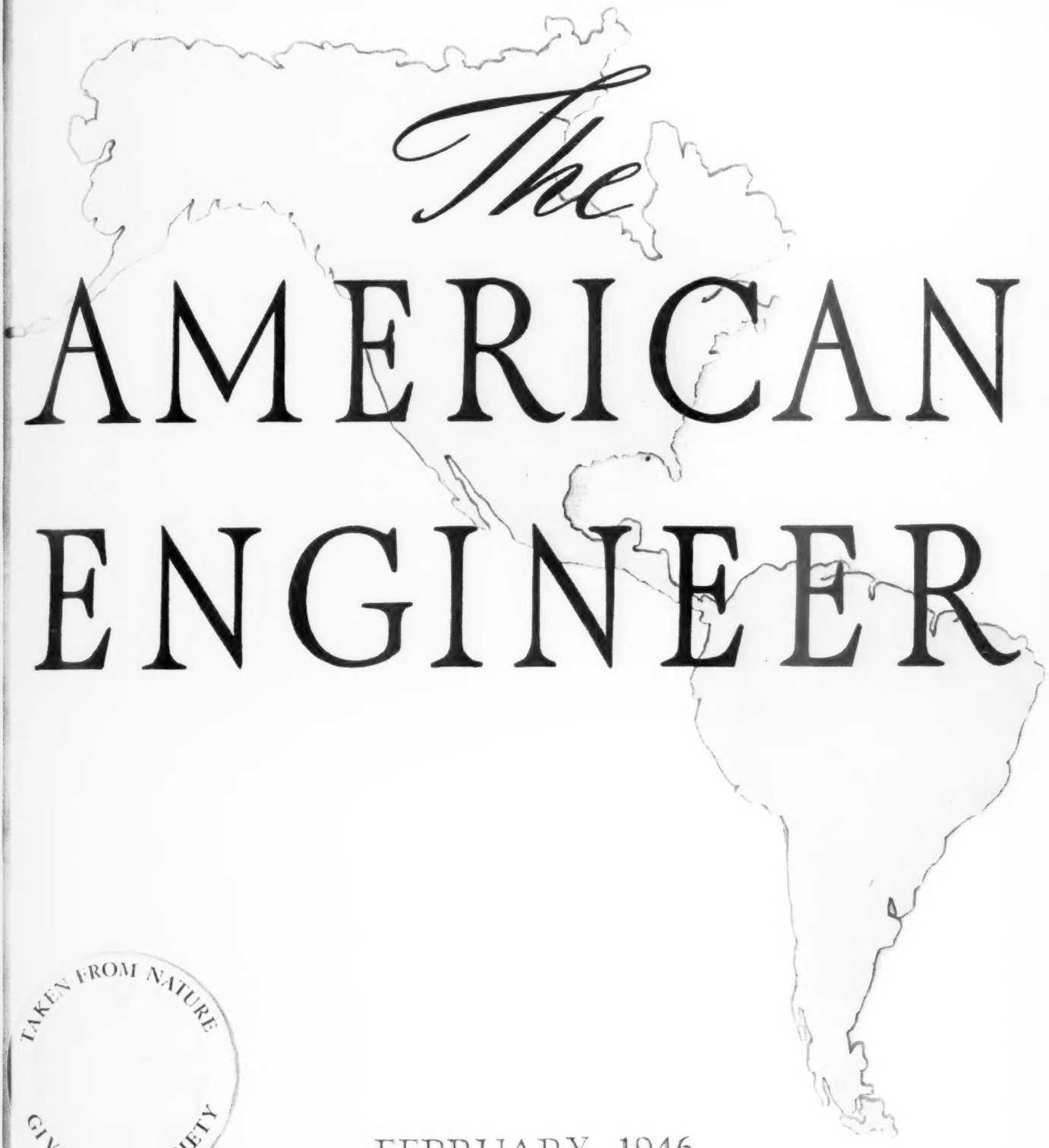

The AMERICAN ENGINEER

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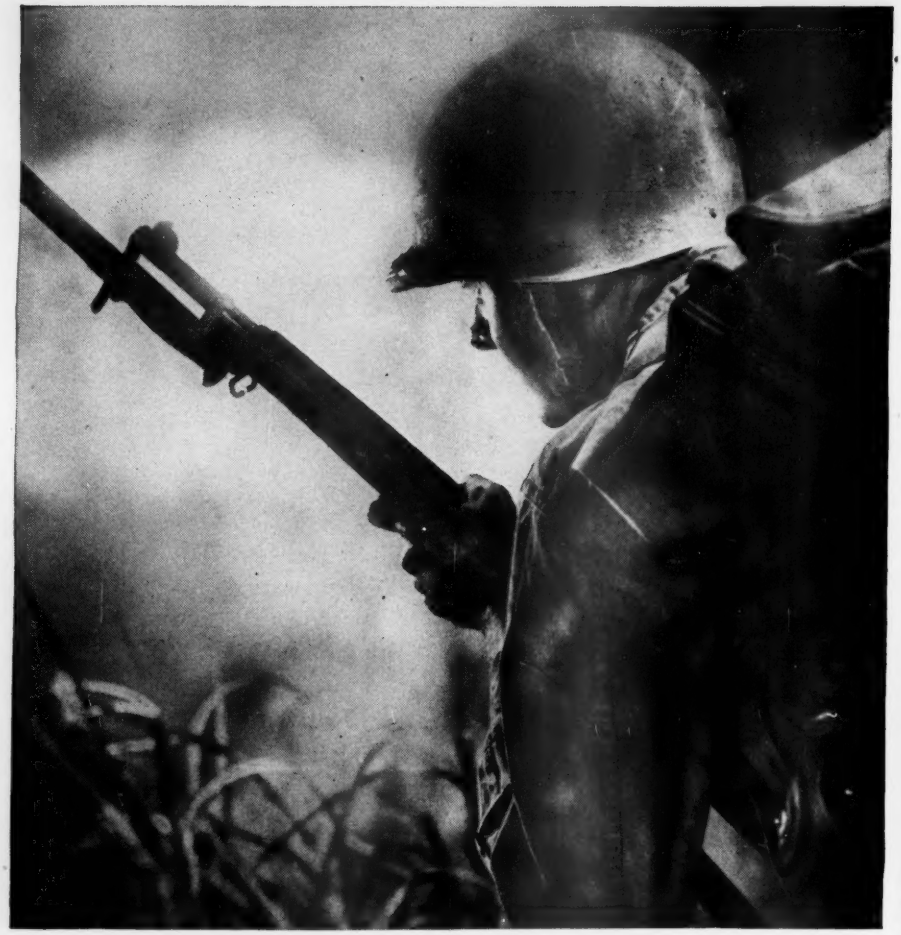
FEBRUARY, 1946

War machines that save lives

In no other war, and in no other country, have greater precautions been taken by military leaders and industry to safeguard the lives of fighting men.

Protection of artificial fog to conceal troop movements . . . Warmth of electric blankets to protect wounded airmen . . . Better chances of rescue for men shipwrecked or shot down at sea . . . these are just some of the things that U. S. commanders asked for to protect American troops.

On this page are a few of these war machines that *save* lives—in which G-E research and engineering played a part. *General Electric Company, Schenectady, N. Y.*



Stealing the enemy's eyes. Our soldiers carry their "fog" with them, mobile smoke generators that blanket whole battle areas in dense white mist. New U.S. smoke machine uses a brand-new principle of smoke generation first worked out in the General Electric Research Laboratory by Dr. Irving Langmuir. These smoke machines have saved many American lives at fighting fronts.

Solar searchlight designed by G. E., in cooperation with the National Bureau of Standards, gives flyers and sailors adrift at sea a way to signal rescuers as far away as ten miles. Most important problem was to find a method of aiming mirror so pilot of plane would catch the reflection of the sun.

Diagnosing flyers' troubles. Photos of subjects in high-altitude test chamber, taken with General Electric x-ray equipment, show the formation of tiny gaseous bubbles in tissues and joints, a condition described as more painful than rheumatism. X-ray studies like this help answer what happens in high-altitude flights.

Blanket saves flyers' lives. In high-altitude bombers, wounded airmen need emergency protection against freezing cold. Now General Electric is supplying the Army Air Forces with electrically heated "casualty blankets" that automatically maintain a protective warmth in temperatures as low as 60 below zero.

★

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FOR VICTORY BUY AND HOLD WAR BONDS

GENERAL ELECTRIC

THE AMERICAN ENGINEER

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The Status of the Engineer In the Armed Services

By John F. Hale, President,
Ohio State Society of Professional Engineers

What can we do about this question of the status of the engineer in the Armed Services? This and many similar questions have been asked and the answer has not been given, neither has anyone offered a thoroughly satisfactory solution to the problem.

Since 1943, the Ohio Society of Professional Engineers has had a committee working on the problem. Some action had been requested by some of our members in the armed service who stated that many engineers stationed on foreign service found it very difficult if not impossible to get increases in rank. Many engineers were said to have remained at the same grade after several years of service.

Observations made during the past few years and conversation with engineers returned from foreign service and with many others who served in this country seem to bear out these claims. While in many cases promotions are not justified or merited, in many others promotions are justified and have been held up for various reasons. Of course, it is true that in many cases certain engineers have been more fortunate than others and have perhaps received several advancements in grade. No doubt all of these advancements were justified but they do not offset in any manner the lack of advancements in other cases.

Results After the War

Work of the committee continued on, although it was believed that very little could be done to correct the situation until after the war. It was recommended that ex-serivcemen be added to the committee and that interviews be obtained with other ex-servicemen so as to make sure that full and complete information be obtained before attempting to request action by officials in charge.

In addition to the problem mentioned above other matters were brought up for investigation as follows:

1. Selective service policy toward engineering students.
2. Selective service policy toward graduate engineers.

John F. Hale

Considering the first point it will be recalled that our engineering schools have been practically stripped of students except a very few classified 4-F and except those sent back to engineering schools to receive accelerated courses in certain subjects. While these accelerated courses have undoubtedly accomplished a great deal for those students selected to receive the training and for the various branches of the service after these men had completed their courses, it is also true that many young men were taken out of school after having completed a portion of their courses and were placed in positions where their training would be of little or no value.

If Things Had Been Different?

Now it is appreciated that this is a democratic country, we must treat everyone alike, that there must be no favorites. Also, it is appreciated that *we did win the war.* That is all very fine, but it did take almost four years to win the war. What difference could it have made if our policy toward engineering students had been different —If they had been permitted to remain in school or perhaps had been *required* to remain in school? Some, of course, wanted action and got action. Many others would have been satisfied to remain in school and we would now have a supply of young graduate engineers coming out of school. As it is, it will be from four to seven years before very many young graduate engineers will be available and during those four to seven years we are going to be severely handicapped by this shortage.

I have been told of cases where certain engineering students had only a few weeks to finish but were called out by Selective Service and put into training.

It has been stated on good authority that engineering and scientific schools in Canada, Australia, England, Russia and even in Germany and Japan have been filled up even more than before the war and of course these countries will have a supply of young graduate engineers coming along in the next few years. Certain members of the armed forces of our allies have been very greatly surprised on hearing of the practice followed in this country.

Yes, we did win the war, but so did our allies and I am quite certain that we would have won the war just as quickly if not more quickly had there been a different policy in this regard on the part of Selective Service.

Engineering Talent Wasted

Regarding the second point referred to above, I have heard of many instances where engineers, graduate engineers and registered professional engineers, with several years of experience have been drafted and placed in positions requiring no engineering or technical ability. One example quoted to me, concerned a young graduate mining engineer with ten years experience and who was filling a fairly responsible position was drafted and for two years was assigned to work which was mostly pick and shovel work. There may have been certain extenuating circumstances in this particular case, but it does seem that something better than pick and shovel work

(*Continued on Page* 11)

American Institute of Electrical Engineers Report on Collective Bargaining

After careful inquiry into present membership practices of unions and prevailing Government attitudes and policy, an AIEE committee has prepared this comprehensive report considering all the implications of the engineer's bargaining position in industry. The report recommends preparation of a factual manual on the American labor movement and establishment of a continuing committee on collective bargaining. Sponsorship of any collective-bargaining agency by the Institute or any of its Sections is disapproved, though the possibility of the AIEE's occasional intervention in disputes as a friend of the court in behalf of its members is recognized.

(*Originally published in Electrical Engineering, Reprinted in The American Engineer by special permission of the American Institute of Electrical Engineers*).

The last fifteen years have witnessed substantial changes in employee—employer relationships. Of the many forces that have accounted for these changes, the most important are

1. The great depression which developed a strong urge for security on the part of wage earners.
2. Social legislation designed to bring about a better distribution of national income and to provide greater security for workers through the establishment of minimum labor standards, various types of social insurances, as well as by the encouragement of labor organizations and collective bargaining.
3. The growth in the membership and power of organized labor, especially in the mass-production industries.
4. The split in the American labor movement.
5. The shortage of man power occasioned by World War II and the controls introduced by unions and the Federal Government affecting this shortage.

Growth of Collective Bargaining

Until very recent years the great majority of employees have dealt as individuals with their employers in establishing wages, hours, and conditions of employment. In 1929—one of the most prosperous peacetime years—the membership of organized labor totaled approximately 3,500,000 workers. As the depression set in, union membership slowly but steadily declined to under 3,000,000.

In 1933 the labor movement surged forward aided by improved business conditions but more especially by the National Industrial Recovery Act and later by the National Labor Relations Act and the policies carried out by the National Labor Relations Board and by the National War Labor Board. Today labor organizations, according to various estimates, have a membership of between 12,000,000 and 13,000,000, and the wage contracts negotiated by them probably apply to an additional 3,000,000 or 4,000,000.

Split in Labor Movement

The character of the American labor movement has undergone considerable change during these years. This change has been accentuated by the existence of two competing national federations (the American Federation of Labor and the Congress of Industrial Organizations), the United Mine Workers of America, and the Confederated Unions of America. The last-mentioned organization is an association of independent unions. To retain or to win leadership in the field each of these organizations has found it necessary to expand its jurisdiction and increase its membership. The movement, which had been largely one of production workers, rapidly spread to clerical employees. Later the drive was broadened to include professional employees.

It was the pressure to bring engineers into heterogeneous unions comprising professional and nonprofessional employees which are affiliated with the AFL or the CIO that led to the appointment of the AIEE committee on collective bargaining and related matters.

Statement of the Problem

To clarify its own thinking the committee has defined the problem which the Institute has placed before it as follows:

Should the American Institute of Electrical Engineers take any action with respect to the determined efforts of unions of professional and nonprofessional workers to organize and sometimes to compel professional employees, including electrical engineers, to join their associations for collective bargaining, mutual aid, and other purposes? If so, what action should be taken?

The National Labor Relations Act guarantees employees the right to organize and bargain collectively and forbids employers to interfere with self-organization or to refuse to bargain with certified groups of employees. There always will be some employers who, unless restrained, will dis-

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A report prepared by the AIEE committee on collective bargaining and related matters: I. Melville Stein, *chairman;* E. P. Yerkes, *secretary;* O. W. Eshbach; W. R. Hough; A. C. Streamer; and B. Van Ness, Jr.

The AIEE committee on collective bargaining and related matters was very fortunate in obtaining the consulting services of Waldo E. Fisher, professor of industrial relations at the Wharton School, University of Pennsylvania. A student of industrial relations for over a quarter of a century and author of many books, reports, and papers relating to that subject, Doctor Fisher has served Government, society, and industry in many important assignments of which the following few are representative: consultant to National War Labor Board, member of staff of International Labor Office, past president Philadelphia Industrial Relations Association.

On Doctor Fisher's recommendation and through his co-operation, the committee has conferred with William M. Leiserson. In introducing a recent article by Doctor Leiserson in *The American Magazine*, the editor made the following statement: "Doctor Leiserson has perhaps the most impartial and comprehensive view of labor problems of any man in America. In the last 35 years he has served as a mediator and arbitrator of labor disputes in many industries. He has made studies of labor problems for cities, states, and the National Government. In addition to being chairman of the National Mediation Board, he has served as chairman of the National Petroleum Labor Policy Board, member of the National Labor Relations Board, and chairman of the National Railway Labor Panel. He is now visiting professor of economics at Johns Hopkins University."

regard the rights and legitimate wants of their workers, and severe competition within industry may occasion reductions in labor standards which progressive and socially minded employers deplore. Also drastic curtailments in business activity give rise to unemployment, loss of earnings, and sometimes unfair terms and conditions of work. It is for these and other reasons that employees have been guaranteed protection in the exercise of their right to form unions and to negotiate wage contracts. The voluntary exercise of these rights cannot be denied in a free society. However, the National Labor Relations Act does not compel anyone to join a union. On the other hand, the Act does not prevent employers and employees from entering into closed-shop or union-shop agreements which, as a condition of employment, require membreship in a particular union.

Professional Minority Unprotected

Many engineers believe that the inclusion of professional employees in an organization of both professional and nonprofessional employees in which the nonprofessional workers constitute the majority would not give engineers adequate protection, inasmuch as their wages and conditions would be negotiated by leaders elected and maintained in power by nonprofessional workers whose interests would have to come first and whose demands might be satisfied at the expense of the professional employees. The interests of nonprofessional employees and of professional employees in many respects are not similar. Because of their education and training, and their genuine concern with the effective utilization of labor, materials, machines, and natural forces, as well as their obligations under their codes of professional conduct, the engineers may prefer to unite to formulate their own objectives, policies, and methods and to negotiate their wages and terms of employment.

The committee is of the opinion that the Institute should make it a matter of record that it is not opposed to labor organizations nor to collective bargaining, so long as the goals of labor organizations do not run contrary to the law or conflict with the best interests of the engineering profession. It believes that the professional engineering societies should have but one concern with labor organizations or unions, namely, to see that professional employees are not compelled to join labor organizations, especially when such organizations are dominated or controlled by nonprofessional employees, and are not forced into bargaining units dominated or controlled by nonprofessional employees.

Closed Shop Not Mandatory

The law does not require anyone to join a labor organization. Direct compulsion may occur in only one way, namely, when a union-shop or closed-shop contract is put into effect. (For definition of various types of union-security arrangements see Appendix I.) The foregoing types of union-employer relationships in the great majority of cases are established through collective bargaining. In only one case has a Federal agency been willing to urge the closed or union shop on an employer, and that was in June 1941, when the National Defense Mediation Board recommended, with but one dissenting vote, that the Bethlehem Steel Corporation accept a master agreement providing for a closed shop which had been submitted to the company by the union representatives of the shipbuilding employees on the Pacific Coast. Several months later, the same Board refused to order the steel companies to grant the union shop to the United Mine Workers of America for its members employed in coal mines operated by these companies. The latter decision brought about the Board's demise.

The National Labor Relations Board has no authority under the National Labor Relations Act to order the introduction of a closed or union shop. The National War Labor Board, presumably in return for the no-strike pledge, has ordered maintenance-of-membership clauses to be embodied in wage contracts and has ordered the renewal of a closed- or union-shop clause during the negotiation of a new contract. It has not, however, ordered the adoption of either a closed or a union shop where these types were not in effect in the expiring contract.

Under closed-shop or union-shop contracts covering all employees in the bargaining unit, professional employees with no supervisory responsibilities could be compelled to join a labor organization which might be dominated by nonprofessional employees. Such compulsion could happen under maintenance-of-membership contracts, only if professional employees were members of the labor organization and failed to exercise their option to resign during the 15-day period set aside for this purpose.

Indirect Compulsions

Indirect compulsion, however, may occur in other ways. Professional employees may be forced into unions of nonprofessional workers by pressure applied by union members. Redress from physical force and threats does not fall within the jurisdiction of the National Labor Relations Board but is a matter that must be taken up with the courts. Also, indirect compulsion takes place when the National Labor Relations Board makes a decision which, because of the absence of a qualified group of professional employees, brings professional employees into a bargaining unit composed primarily of nonprofessional employees, but there is no direct compulsion to join the *organization* of nonprofessional employees which is recognized as the *bargaining agent*. However, to avoid ill feeling between the professional employees and their bargaining agent and to take advantage of the only opportunity to be represented in the negotiations covering the terms of their employment, the professional employees might find it necessary to join the organization controlled by nonprofessional employees.

To protect themselves against either direct or indirect compulsion, engineers may find that their best defense is an organization either of engineering employees, or of engineering and other professional employees, associated with or independent of a national federation of labor.

It is the committee's considered opinion that engineers, guided by their personal convictions and the circumstances in which they find themselves, should decide for themselves whether they wish:

Decisions to Be Made

1. To join a union associated with one of the national federations of labor which may be either a union of professional employees only or a union of both professional and nonprofessional employees.
2. To join with other professional employees for the purpose of forming an independent organization composed exclusively of engineers or of engineers and other professional employees.
3. To refrain from joining any labor

organization.

Except in cases involving closed-shop or union shop contracts, the engineer's right to make his own choice is guaranteed by the National Labor Relations Act.

The committee belives that electrical engineers should be fully informed as to their rights and opportunities under the National Labor Relations Act but that their choice of a bargaining agency should not be influenced by the Institute, beyond its indicating to them that, in the interest of their professional status, it would be undesirable for them to belong to, or to be represented by, a labor organization dominated or controlled by nonprofessional employees.

Possible Courses of Action to Be Taken by the Institute

Five courses of action suggest themselves to the committee. The Institute may:

1. Do nothing.
2. Study the situation and prepare a manual for the individual members, setting forth what the Institute and similar organizations may and may not do and indicating clearly what courses of action are open to individuals or groups.
3. Set up machinery within the engineering societies which will enable them to intervene as a friend of the court for the purpose of assisting engineers engaged in engineering work of a professional nature to remain outside of bargaining groups of nonprofessional men, or to exercise their right to bargain collectively through representatives of their own choosing.
4. Attempt to set up professional organizations through the Institute or its Sections, as collective bargaining agencies for professional men.
5. Attempt to secure a modification of the Wagner Act which would either:

(*a*). Exempt engineers from the provisions of the Act

(*b*). Put professional employees in a separate category under the Act.

The committee believes that the AIEE would fall short of fulfilling its obligations to its members if it were to do nothing at all. While the Institute is interested primarily in increasing scientific and technical knowledge in the field of engineering, it cannot ignore the impact of political and social changes in our national economy upon the engineering profession. The recent developments in the field of industrial relations fall into this category.

Maintain Professional Standing

The committee also believes that some action is necessary to ensure the maintenance of a high professional standing among engineers in conformance with the objectives stated in the AIEE constitution:

Its objects shall be the advancement of the theory and practice of electrical engineering and of the allied arts and sciences and the maintenance of a high professional standing among its members.

On the other hand, the course of action listed as 5(*a*) has little to offer as a solution of the problem facing engineers. Those close to the situation in Washington hold that efforts to exempt engineers from the provisions of the National Labor Relations Act have very little chance of success. The Act applies to all employees including doctors, lawyers, and other professional employees, working in establishments engaged in or affecting interstate commerce. It would be difficult to justify exemption for engineers as a group, especially since many engineers undoubtedly would protest such action.

Engineers Not Excluded

It also has been pointed out that, even if this objective could be achieved, the problem would still remain. Unions could and probably would accept engineers as members and nothing in the National Labor Relations Act would preclude such action, even if engineers were excluded from the provisions of the Act. Moreover, in those instances in which engineers believe they need a labor organization to protect their interests and the employer refuses recognition, the bargaining agency for the engineers would have to resort to strikes to obtain a wage contract, since the exclusion of engineers from the National Labor Relations Act would not permit certification by means of an election under the supervision of the National Labor Relations Board. The engineers would be in exactly the same position in which the foremen found themselves prior to a recent decision.*

When the National Labor Relations Board held that it would not establish a bargaining unit for foremen and would not certify bargaining representatives for them, a wave of foremen's strikes spread throughout industry. As a result foremen through their organization, the Foremen's Association of America, have secured recognition and union agreement in certain establishments.

To clarify the situation, the National Labor Relations Board found it necessary to hold a hearing in Detroit in December 1944 for the purpose of reconsidering its position on the foremen question and of deciding whether they were entitled to all the rights that other employees enjoy under the National Labor Relations Act. Lastly, the fact that engineers now have the right

* On March 26, 1945, in a case involving the Packard Motor Car Company and the Foreman's Association of America, the Board reversed by a two to one vote its Maryland Drydock decision and granted organizations of foremen, which are unaffiliated and independent of other unions, the right to petition the Board and, where they can win an election, to be certified as the legal agent of supervisory employees in a specified bargaining unit.

Awarded Legion of Merit Medal

Colonel Clarence E. Davies

The American Society of Mechanical Engineers announces that Colonel Clarence E. Davies has resumed his duties as Secretary of The American Society of Mechanical Engineers, 29 West 39th Street, New York, after an extended leave of absence on active duty in the Ordnance Department, U. S. Army. Lieutenant General Levin N. Campbell, Jr., Chief of Ordnance on Tuesday (January 8) presented Colonel Davies with the Medal of the Legion of Merit, in Washington. Colonel Davies was Chief of the Control Division, Office of the Chief of Ordnance, in which capacity he was concerned with problems of policy, organization, methods and statistical reporting practices. He has been with the ASME since 1920, becoming National Secretary in 1934. The medal, given for meritorious achievement, is the second highest award for officers and enlisted men not in active combat duty.

to join unions whenever such a course of action seems desirable gives them, as individuals, a potential bargaining power with their employers which many engineers would not want to surrender.

Alternative to Exclusion

Through course 5(*b*), instead of attempting to have engineers in professional work excluded from the provisions of the National Labor Relations Act, the attempt might be made to modify the Act so as to place professional employees, including engineers, in a separate category under the Act. Presumably, under such modification professional employees would be considered ineligible for inclusion in bargaining units of nonprofessional employees but would still have the right under the Act to be placed in bargaining units of professional employees, if they so desired and to be represented by representatives of their own choosing. In principle, at least, such an arrangement would seem to be better than any proposed to date with refer ence to modification of the existing law affecting collective bargaining by professional employees. It would avoid having professional employees represented by nonprofessional employees or by representatives chosen by a group in which nonprofessional employees predominated, and yet it would not deny professional employees any rights guaranteed to other types of employees.

Could Modify NLRA

If requested to do so by a substantial majority of their professional employee members, the engineering societies could quite properly advocate and work for such a modification of the National Labor Relations Act. In doing so they would be following a course similar, in principle, to that sponsored by the American Federation of Labor, which has advocated an amendment to the Act providing for craft bargaining units when requested by employees in particular crafts. Naturally the outcome of such a procedure cannot be predicted, but it seems unlikely that the necessary modification of the Act could be accomplished at an early date, if at all.

Meanwhile, professional employees would have no assurance that they would not be represented by representatives chosen by groups dominated or controlled by nonprofessional employees. In this connection it should be pointed out that, if professional employees, through the formation of, or affiliation with, organizations of professional employees, were assigned by the National Labor Relations Board to bargaining units composed solely or predominantly of professional employees, they would be in a no less favorable position in the event that the above modification of the National Labor Relations Act were accomplished later.

Canadian Precedent

An arrangement similar to that indicated in course of action 5(*b*), but providing for a separate order-in-council and board, recently was advocated in Canada as a substitute for the present Canadian Wartime Labour Relations Act (P.C. 1003) insofar as that Act involves professional employees. The attempt was not successful but did result in a temporary modification of the procedures under the Act which apparently would assure the right of professional employees to be included in bargaining units of professional employees, even though they had been included previously in heterogeneous bargaining units or units of nonprofessional employees.

Course of action 4 would seem to be undesirable for a number of reasons. The right to bargain collectively is not an abstract right but one to be exercised in terms of specific bargaining units. To enjoy this right employees must form or join organizations which are free from employer domination and control. Section 8 of the Wagner Act specifically states that it shall be an unfair labor practice for an employer:

1. "To interfere with, restrain, or coerce employees in the exercise of the rights guaranteed in Section 7" which reads "employes shall have the right to self-organization, to form, join or assist labor organizations, to bargain collectively through representatives of their own choosing, and to engage in concerted activities, for the purpose of colective bargaining or other mutual aid or protection."

2. "To dominate or interfere with the formation or administration of any labor organization or contribute financial or other support to it . . ."

Might Prove Handicap

The committee believes that any bargaining agency for engineers or professional employees set up by the American Institute of Electrical Engineers or its Sections later might find itself handicapped at subsequent hearings before the National Labor Relations Board. Competing unions undoubtedly would challenge its status as a bona fide bargaining agency, inasmuch as it had come into existence with the help of an association whose membership and more especially its officers and directors include employing engineers and management representatives. Professional labor leaders undoubtedly would try to prove that these agencies were initiated, sponsored, assisted, and indirectly controlled by an association dominated by employers and their representatives and would demand that they be disestablished. Thus these Institute-sponsored bargaining agencies always would be in the position of having to prove to the National Labor Relations Board that they were not employer dominated.

The committee believes it would be a disservice to the individual members as well as the Institute to endorse a procedure which later might be declared to be in violation of the National Relations Act or would hamper engineers in subsequent efforts to exercise their rights under that Act. The committee would like to add that, just as it considers it unwise for nonprofessional workers to dominate a minority of professional employees, so it believes it equally unwise for the Institute to take any action which might leave the impression that its members who are employers or who occupy official positions with management have any desire to impose their ideas as to organization or collective bargaining on those members of the Institute who happen to be employees.

Not An Engineer Function

For this reason and because the committee believes that the creation of labor organizations for collective bargaining is a function which falls outside the field of activity of the Institute, it concludes that the Institute itself or any of its Sections should refrain from sponsoring either directly or indirectly the formation of bargaining agencies for its employee members

(*Continued on Page 23*)

Report of Fact-Finding Committee On Collective Bargaining

By J. S. Kennedy, Chairman

A year has nearly passed since our Committee came into being, and this report is being made to the Annual Meeting of the National Society of Professional Engineers in Cleveland, December 8th, 1945.

The following information has been received to date pertinent to the subject:

(1) Report of the AIEE Committee which recommends as follows:

RECOMMENDATIONS

"The Committee on collective bargaining and related matters recommends that the American Institute of Electrical Engineers adopt the following tentative policy:

1. Prepare a manual for members presenting the essential facts about the American Labor movement and the National Labor Relations Act (Wagner Act) and setting forth (1) what the Institute may and may not do and (2) the courses of action that are open to its members.

2. Seek the establishment of a joint committee composed of representatives of the various engineering societies which would serve as a clearing center for these associations and, in those cases in which two or more societies desire and have the right to intervene as a friend of the court on behalf of their members, make arrangements for a common counsel.

Joint Committee Helpful

Note: The Committee has been informed that the Institute generally will have little opportunity to intervene as a friend of the court in labor cases involving engineers. It believes, however, that such action may be both possible and desirable in certain circumstances. A joint committee would enable each society to join with other engineering societies, to act alone, or to refrain from any action depending upon the issues and circumstances in a given case.

3. Establish a continuing committee on collective bargaining and related matters in order that the Institute may be kept informed about new developments concerning unionization and collective bargaining.

4. Refrain from establishing collective bargaining agencies for engineers which are directly or indirectly associated with the Institute or its Sections, and from assisting in any way in the actual formation or administration of a labor organization for engineers.

J. S. Kennedy

Isolated Bargaining Unit Fails

(2) A report from J. H. Morgan, Urbana, Illinois, concerning a case of The Associated Telephone Engineers in Illinois which illustrates the failure of engineers to achieve recognition as a separate bargaining unit largely because of finding themselves in a situation which was completely foreign to them.

(3) Information concerning the "Quebec Federation of Professional Employees" which shows the approach to similar problems by our Engineer Brethren in Canada.

In this paper Engineer Nold quotes from the existing laws to show what is now the law of the land. He cites some actual cases to show interpretations of the law. He then raises a most interesting field of speculation when he says, "Perhaps we should consider whether it is wise or desirable for engineers engaged in professional work to avail themselves of their rights and privileges under NLRA. Let me emphasize that I am referring here only to those engineers who are actually engaged in work of *professional quality* . . .

It is well recognized that not all men doing professional work are equally competent or productive. Professional men and, to a larger extent, their clients and employers recognize that professional services should be compensated for in proportion to the difficulty and importance of the service rendered and the responsibility assumed. Collective bargaining or labor unionism when applied to the professional fields tends to defeat this principle of compensation. In union contracts employees are, for purposes of compensation, divided into groups or classified according to kind of work they do without regard to the value of the service of the individuals."

Engineer Bargaining Units

The author then points out that employee engineers, under the NLRB can, if necessary, form a bargaining unit of their own and that the NSPE has recommended that each member State Society set up a committee whose members shall acquaint themselves with the rights and privileges of engineers under the NLRB and the administration thereof under the NLRB so that they may be available to intelligently advise engineers who are facing problems of unionization and collective bargaining.

(4) Information from Engineer W. L. Thrailkill, Spokane, Washington, relative to an article which was published in the August 1945 issue of "Engineer and Architect" (published monthly by the Technical Engineers and Architects Associations, Local No. 17, of Washington and Alaska) by E. E. Smith in which he states in part, "Unfortunately for various persons, some licensed and professional engineers do not care to become members of a labor organization, but do realize the necessity of organization, as witness the attempts by numerous engineering societies to form negotiating groups. There is one group that I believe all licensed engineers should belong to; namely, the National Society of Professional Engineers. Their in-

(*Continued on Page* 15)

Retiring President, Harry E. Nold Comments on His Two Year's Stewardship

Editor's Note—The following is a digest of the remarks of Professor Harry E. Nold, before the final meeting of the 1945 Board of Directors' in Cleveland, December 7th. On the following day, at the Directors' Meeting, Professor Nold turned over the gavel to the incoming President of the National Society of Professional Engineers, Ritchie Lawrie, Jr.

I wish to express my deep appreciation for the wonderful cooperation accorded me by this Board, both individually and collectively. The members of the Executive Committee have carried an additional burden, and to them this Board owes more than it knows.

Thanks to Committees

I wish also to express my appreciation to committee members and committee chairmen for their untiring efforts in behalf of our Society. In particular, I wish to thank Ray Fuller, Chairman of the Legislative Committee, and Charles Burke, Chairman of both the Constitution and By-Laws, and the Publication Committees, for the enormous amount of intelligent and effective work they have done for the NSPE.

ECPD has a committee which has been and is now hard at work attempting to develop a "Canon of Ethics," which it is hoped will, when completed, be accepted by all engineering societies and State Boards of Registration of engineers, thus making it truly a national code. A few months ago our Society was invited to appoint a representative to this committee. Your President accepted this invitation and, because of interest and long association with the problem, agreed to undertake this committee responsibility himself. This work he has now been delegated to carry on as the new chairman of our Practice and Ethics Committee.

The work has developed to the point that there is pretty general agreement as to what should be in such a code, but some disagreement as to the form it should take. One school of thought, represented largely by the Founder

Prof. Harry E. Nold

Societies, favors a long code of 31 or 32 items. Another group favors a shorter statement of a "Code of Ethics," or Principles of say 8 to 12 items, to be accompanied by a longer detailed "Canons of Practice." This latter form is, I am told, rather generally favored by our State Registration Boards and has been advocated by your President.

Our 1945 Executive Committee was new this year. It has justified itself; five meetings this year—three on the day preceding Board meetings, and two special meetings.

The Washington Office

The Headquarters Office in Washington, D. C., has been reorganized and Mrs. Coad made officially the office manager. This relieves the Executive Secretary of much detail and gives him more time for important operational and policy matters.

Last December in New York, I said that one of the very important problems before us was to provide a paid editor for the American Engineer, and to move the editorial office to our headquarters in Washington. This has been done.

We are deeply indebted to Arthur Sheridan for his effective work as editor of the magazine during the years when we could not furnish a paid editor.

Your President was instructed to have prepared and introduce legislation to have the National Labor Relations Act amended so that Professional Engineers would be exempted from the application of the law. A series of letters to various State Societies demonstrated a lack of uniformity in opinion among our members on this issue. Also, according to the best information available, such proposed legislation has no present chance of being enacted.

For these reasons and because any significant change in the NLRB to the advantage of engineers would require the backing of not 10,000, but 100,000 engineers, your President assumed authority in postponing any attempt to have the Wagner Act amended.

Relations With Founder Societies

Our relations with the Founder Societies and other national engineering societies are improving steadily. But we have not yet won their complete confidence so necessary to the full cooperation which is desirable. This should be a major project of our executive secretary for 1946 and until this objective is reached.

For the past eleven years the activities of NSPE has been devoted largely to the problems of engineering registration, developing professional consciousness in engineers and in building up our Society numerically. These have all been and still are necessary activities and much yet remains to be done. The time has now arrived, however, when a materially increased part of our activities needs to be expanded into other channels. We now need to devote more time and money to furthering the interests of the engineering profession and the members thereof. Ethical relationships; engineer to engineer, engineer to client, engineer to employer, and engineer to the government and public, need further study and publicity. Ways of ethically improving the economic and social status of engineers need our serious consideration.

Legal Problems

Many of our current pressing problems are legal. For example, the en-

gineer in the U. S. Civil Service; per diem compensation of engineers doing work for governmental departments and agencies; engineers in the armed forces; the doing of engineering work by engineers in governmental employ which could be done better and more economically by engineering experts in private practice; exerting our influence to defeat legislation detrimental to our profession, and helping to have laws enacted which are just and beneficial to our profession, etc., etc.

As I said before, our organizational activities and our efforts to educate engineers to the full implications and responsibilities of professionalism must continue. In our efforts to carry on this work we have largely forgotten that our present State organizations need continued help and encouragement. We have been and are now neglecting our State organizations. The effects of this policy we are seeing all too plainly in some of our weaker State organizations.

Much Work to Be Done

To do what we now should be doing for our country and for our profession, means more staff and a larger national budget *now*—not in four or five years from now.

I see the need for an Executive Secretary with two assistants, each with office help; one assigned to developing new State Societies and helping presently struggling Societies. The Executive Secretary could thus have time to devote himself to problems of major policy and the development of closer relationships with other national engineering societies.

We as a Board, need to spend more time thinking of our large problems and less to routine. In my opinion, but little time of the Board should be spent on routine.

Quebec Meeting

On the 24th of November I had the pleasure of accepting and fulfilling an accepted invitation to meet with the Corporation of Professional Engineers of Quebec. They asked me to speak on something of an inspirational order—as near as an engineer can do anything inspirational—to try to get the picture before them of what a Professional Engineer is, the duties and obligations, and the responsibilities. I therefore took a subject, "The Development of a Profession."

I had an audience of 400 engineers; maybe 5, 6, or 7 plus or minus. They told me that the capacity of the room that we were in was just slightly over 400, and I couldn't see but two or three vacant seats. I had a very attentive audience. They had there the Premier of the Province of Quebec, the President of the Mining and Metallurgical Society of Canada from Halifax, one of the officers of the National Professional Engineering Societies of Ontario, our friend Beau Bien, who spoke to us last December, and a number of other notables of the engineering profession of eastern Canada. As I say, I had an exceedingly attentive audience.

The last thing I did was to make a plea to those people on the basis that in my opinion we needed closer cooperation between our Society and the engineers of Canada. They are attempting to solve about the same kind of problems. It will be beneficial to exchange viewpoints.

Friendly Reception

I thought you would be interested in the reception we got. It was a most cordial reception. One thing interested me in that even though they were rather formal and courteous, and they sang in French—I don't know whether it was "God Save the King," but it was to the tune of "God Save the King"—and then say turned around and had our "Oh, Say Can You See" played. I can't sing, so I couldn't sing, and the rest of them didn't know the words. The courtesy extended to me as a representative of the United States was very much appreciated. Then they toasted the King and they toasted the President of the United States. They have an innate courtesy, apparently, in dealing and working with people across the border between the United States and Canada. It is an organization that we can well emulate the next time we have a distinguished guest or visitor from Canada.

That is all your President has to say, and that is his report.

John F. Hale

(*Continued from Page 4*)

could be found for a graduate engineer.

I also know of a young optometrist who was drafted, but this young man was given a fairly decent non-commissioned grade and assigned to work for which he was trained. Also, I understand that this young man had been asked to apply for a commission inasmuch as his draft status was somewhat critical. After he had refused to do this, Selective Service was practically compelled to take some action.

Organization Gets Results

While the above is one instance of a doctor being drafted, I know of many hundred who were given commissions not lower than first lieutenant and often up to major. Also in many cases I know that these men received one or two promotions while in the service. And the reason for this? I may be wrong but I am inclined to believe that doctors have been well represented by the American Medical Association in this matter and that proper consideration has been given as a result of these requests.

It might be claimed that engineers have opportunities in the service which medical men do not have. I do know of some engineers who have advanced up to the rank of Major General, perhaps some have gone higher. Most of these officers have shown unusual qualities of leadership and have been promoted on this account rather than their engineering ability, although their engineering ability probably helped them to reach their position of leadership as much as any other factor.

Now, what can we do about this matter? In my opinion, I believe there are two things which should be done:

For World War II

First, I believe the National Society of Professional Engineers should see that this matter is taken up with the proper officials so that suitable arrangements can be made for proper consideration of engineers and engineering students before the beginning of World War III.

Second, I believe a serious effort should be made by the National Society of Professional Engineers and all the State Societies and Local Chapters to build up the membership of the National Society so that proper recognition of engineers and engineering students can be obtained by an organization which can really claim to represent ALL ENGINEERS.

The United States Department of Commerce reports that in 1946—"Even with an average workweek 5 hours shorter than in 1940, there would be more unemployed than the 13,000,000 in 1932."

EDITORIALS

Time to Speak Up

The editor of the American Machinist feels that the majority of industrialists seem to have a "Casper Milquetoast" complex. They have been far too hesitant about voicing their views publicly on fundamental issues affecting their plants, people, profits and business lives. We quote from an editorial in part as follows:

"Aside from a courageous few, conspicuous because of their thin numbers, industrialists have taken in silence a lashing from government officials, from union leaders and from opponents of all stripes.

"Industry's critics, by contrast, have been ambitious and loud in telling the country about industry's shortcomings and about measures that must be taken to regulate industry if the nation is to prosper.

"The time for dignified silence is over. Reticence should give way to a bold campaign of public education.

"American industry has everything to gain by 'laying it on the line.'"

Panning The Experts

No doubt many responsible businessmen do hesitate to defend themselves against the often irresponsible statements made by more or less radical individuals. Whatever the reason, it is all too true that the case for "free enterprise" has been badly handled, both on the public platform and in the press. Apparently this discussion has been put largely in the hands of "public relations" men. Such writers are supposed to be skilled in the somewhat dubious art of getting into the heart and mind of Raymond Clapper's "typical Omaha milkman." They aim to make the complexities of economics and the social sciences in general so simple that even a child can understand.

We have a suspicion that too often such writers feel compelled to write a "line" that goes over with the boss, even more strongly than with the milkman. For even a public relations expert must known the men who historically have been responsible for overthrowing decadent institutions—the George Washington's, the Laski's and the Lenin's, were distinctly not of the milkman type.

It maybe that if business could manage to agree among themselves, and should then go personally on the public platform, or into print with a real alternative to either the strict status quo, or socialization of industry, the results might be much more encouraging than in the past.

"What We Fear, We Smear"

A Professional Engineer has sent us a copy of his letter to the editor of Fortune Magazine, in which he protests at the tone of a recent article, referring to scientists and engineers as "long hairs," and "hairy ears."

There may be some basis for the suggestion that the unfortunate tone of the Fortune articles—its tone being the chief objection—may be the reaction to the recent rather devastating testimony of certain distinguished scientists, dealing with the control of atomic energy. This sort of "mildly derisive" attack—dragged into the article literally "by the eye-brows," as it was, might well be the beginning of the well-known "smear campaign—based on the century-old fear of intelligence in public affairs. In that case we shall see more of it later.

Scientists Not Easy to Handle

If this is the correct diagnosis, the fear referred to is in the minds of those who would much prefer to deal with a government represented by the "Hinky-Dinks" and the "Bath-House Johns" of our political system. If engineers and scientists are going to be "smeared," it will be the work of those who fear the intrusion of the kind of exact knowledge such as is available chiefly through scientists and engineers. In the past the so-called "intellectuals" and the "brain trusters" have been subjected to that sort of thing.

There is nothing more certain, however, than that the day when slurs on intelligence can be effective in America is definitely past. The position of the American technologist is secure, for he represents certain *trends* which are inescapable. One of these trends is the use of more and more technology.

A necessary parallel trend is the use, in the public interest, of the highly specialized brains of the men who design and install that technological equipment. Only through the utilization of engineers in positions of responsibility in government, can our social mechanisms be coordinated with our techniques of producing and distributing goods and services in our type of civilization.

Those men who attempt in the future to finance "smear" campaigns which aim to belittle the usefulness of the Scientific Method in the conduct of public affairs, are certain to be wasting their time and money. They will be the victims of their own social unsophistication and 19th Century credulity.

Scarcity Incorporated

Some high placed authorities insist that Americans live in an artificially created scarcity—dictated largely by the necessity of maintaining prices at profitable levels. "Scarcity" is, of course, a relative term, for compared to the rest of the world, we Americans have great abundance. Compared to what we could produce in America, we have, probably, much less than we might have, did not artificial controls restrict production.

An instance of the "scarcity psychology" in America is that of the plowing under of cotton, and the killing of little pigs, not to mention thousands of factories idle during the depression years when millions of people were in need of the things those factories might have produced.

President Karl T. Compton, of Massachusetts Institute of Technology stated that the Army's destruction of Japanese cyclotrons was "an act of utter stupidity." Gen. Douglas MacArthur says he acted on the orders of a "high" authority, which "authority" probably will prefer to remain anonymous as usual.

We recall that following World War I, business organizations in America petitioned the government to dump army surpluses in the ocean. We further recall that following the armistice there was an unexplained epidemic

of "fires" in quartermaster's stores throughout France.

Obviously we cannot have a world at peace, or a world of general prosperity, so long as a synthetic scarcity of essential and potentially plentiful goods is promoted, thus providing the "motive" for war—a fight for the possession of scarce goods, scarce markets and for the control of a still more scarce commodity—*the knowledge of the causes of war and poverty.*

The true function of the Engineering Profession should make engineers opposed to any unnecessary scarcity of replacable goods and services, and in favor of plenty.

Engineers-in-Training

The following item from the "Ohio Engineer" is reproduced here because it illustrates the great benefits that grow out of a State Registration Law that provides for Engineers-in-Training:

"The Board of Registration of Engineers and Surveyors asked the Attorney General for an opinion on whether or not college graduates, who had not yet completed their four years of experience, could apply for registration as Engineers in Training before January 1, 1946 and be exempt from the written examination.

May Register Without Examination

"The Attorney General says 'Graduates from engineering and surveying courses in schools or colleges approved by the State Board of Registration for Professional Engineers and Surveyors as of satisfactory standing *are entitled to be registered without examination as engineers or surveyors in training provided graduation occurs prior to January* 1, 1946 *and an application for registration is filed prior to such date.* In order to obtain final registration without examination the four years of experience required by said Section 1083-13 must be obtained prior to January 1, 1946 and the application for registration filed before that date.

"In the event said four years of experience cannot be acquired prior to January 1, 1946 persons seeking final registration are resuired to take the second stage of the examination provided for in said Section 108v-13, General Code." (The second stage referred to is an examination covering the 4 years of experience which may be either written or oral, or both).

"Application blanks for registration as Professional Engineers or as Engineers in Training may be secured by addressing the State Board of Registration for Professional Engineers and Surveyors, 21 West Broad Street, Columbus 15, Ohio."

Forestalling Socialization

Hon. Oren Harris, member of the interstate and foreign commerce committees of the House of Representatives, in addressing a convention of the N. Y. State Fruit and Vegetable Shippers and Receivers Association, discussed the socialization program in Great Britain. He warned that the same thing could easily happen here, if a formula could not be found through which privately financed transport could exist in competition with government financed agencies. He said in part:

"I can hear some who do not think through this problem say 'And so what?' This view is narrow. It holds that, so long as trucks and railroads, bus lines and airlines roll and fly, we don't care what happens to other elements of our business fabric. But there is much more to this picture than meets the eye blinded by self-interest.

"If you examine the history of countries that have gone over to socialism, you will see what I mean. The first step is the socialization of transportation and communication. We see in England today that almost first on the program of the new socialistic government is the nationalization of transport. A few days after the government took over the banks, it took over domestic airlines. I warn you that what is happening in England can and will happen here if privately-financed transportation goes bankrupt in its unequal competitive race with government-aided transport."

There will be thoughtful businessmen who will not agree that the "first step" is the socialization of transportation and communication. Before socialization, comes a wide-spread dissatisfaction with private operation and service to the country. Human resistance to change, which is nowhere more pronounced than in Great Britain, will prevent any drastic move in the direction of socialization, so long as private operation is reasonably tolerable.

What is really needed here as elsewhere are organizations of businessmen who realize their obligation to themselves as well as to the public to see that financial and operational management meets the critical public needs in this stream-lined Age.

Are Price Ceilings Still Necessary?

OPA Administrator Chester Bowles, speaking before the National Association of Manufacturers in New York had this to say about the need for continuing price controls:

"Cocoanut which OPA decontrolled some thirty days ago, has quadrupled in price. Many grades of furs, from which price controls were removed during the Fall months, have more than doubled. Your wife will tell you that some grades of oranges, lemons, and grapefruit moved up 50 to 100 per cent in the first few days following the action of OPA in removing the price restrictions.

"If this occurred on food products which seemed to be in adequate supply, what would happen to meat, vegetables, milk, cereals, and all the other dozens of food products which are in more scarce supply?

"If the Nation accepted the advice of your leaders to drop price control 60 days from now, what would happen to clothing prices? Right now the apparel situation is tighter than it has been since the beginning of the war.

"Our veterans in search of their first outfit of 'civvies' are forced to walk from store to store and even then often fail to secure the clothing to fit their needs. All authorities agree that this shortage is likely to continue for a great many months to come.

"If we accepted your official recommendation of the early removal of all price control, what would the public be asked to pay for automobiles, refrigerators, washing machines and vacuum cleaners. Some say that competition would take care of all that. I can only say that this experience is not in line with the facts."

Letters From Readers

The Editor,
The American Engineer:

In the October issue you call attention to patent incentive systems and the article in Product Engineering by William J. Russell. You indicate you would like to get a concensus on this subject. May I call your attention to "Paying the Engineer," which appeared in Electronic Industries for November, 1945, which sets forth a unmber of plans for payment of engineers for inventions contributed.

With respect to this same general subject, note the following from a discourse which I recently gave on "Free Enterprise":

"The independent inventor hopes for commercialization of his invention and a share of the profits. His incentive is his confidence in the certainty of reward, whether from a new business which he establishes, from the royalties received under a license, or from the sale of his patent rights.

"The small manufacturer invests money in research to obtain a new or better product to compete with both small and large competitors. Often the smaller enterprise can out-invent and place in production more rapidly new products, than a greater manufacturer. Most of our great enterprises have had their small beginnings, and were at one time 'small business.'

"The larger enterprises or big businesses indulge in extensive research to create new products and new markets beyond the financial scope of small business. In addition they also carry on research on products to compete with the smaller manufacturers who often have lower overhead.

"The individual engineers and scientists working for either small or big industries hope for advancement, security of employment, or honor and recognition from fellow scientists and engineers resulting from the commercialization of their inventions. As such engineers and scientists receive their rewards and become more established, their creative desires tend toward contributing something of value to humanity."

I am very much interested in all plans of compensation which broadly can be called incentive payment of engineers, whether such payment is for an invention or for an invention or contribution resulting in increased production, or other engineering activity.

Alois W. Graf,
Institute of Radio Engineers,
Chicago, Illinois.

Newark, N. J.

The Editor,
The American Engineer:

In your editorial appearing in the October issue, you quote the very significant words of Mr. James H. McGraw, Jr., and go on to ask, "Where are we going to find the type of 'constructive imagination' that can actually bridge the chasm between our two American worlds?" Are we going to find such unusual ability?

This gives rise to the question, "Do we need unusual ability?" Indeed, would such ability in an exceptional few, solve the problem? I do not think so.

Great leaders and great thinkers have appeared among us from time to time, but it is often long after these teachers have left this mortal scene that others have at least partially accepted the principles which the leaders preached, and before the results of their teachings have begun to show any practical effect.

Time to Wake Up

What we want now, and want with the utmost urgency, is an awakened consciousness of the enormous responsibilities which modern developments have placed upon the shoulders of technically trained men.

It is quite useless to stand around and wait for a Messiah, or a group of Messiahs to save us. We have to start to save ourselves now, and in my opinion the logical place to start is in our schools and colleges, especially in our technical schools.

Ever since Hippocrates formulated the ethical principles which should govern the practice of medicine, even though the Hippocratic oath may not have always been administered, these principles have been accepted as a fundamental element of medical training, and have indeed been followed by a large majority of its members to a degree which sheds great glory upon the medical profession.

The Technologist's Responsibility

The recent development of the atomic bomb has brought vividly, and in a sense suddenly, to our attention the fact that through a long course of years our engineers and scientists have been gaining a control of the hidden forces of nature which however beneficial they may be if rightly used for constructive purposes, if used destructively, may bring ultimate disaster to us all.

This being the case, upon whom but upon those who have been, and will continue to be responsible for the development of these enormous and dangerous powers, should fall the main responsibility for their beneficial use?

This is not intended to be a sermon, or a moral discourse; we are here interested quite simply and plainly in the physical preservation of the human race.

What are we going to do about it? That is the most vital question that confronts us at the present time. And it appears to me that upon none more than upon the membership of Societies such as ours, falls the obligation to do everything we possibly can, to find the right answer.

James O. G. Gibbons,
Gibbons & Associates,
Industrial Engineers.

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9 South Surrey Ave.,
Ventnor, N. J.

The Editor,
The American Engineer:

The production and consumption of materials is a matter of interest to all engineers. The subject matter of the enclosed copies of letters that I am mailing to my U. S. Senators, which is self-explanatory, should be of interest to you.

I am inclined to believe that engineers should become more active politically in matters dealing with engineering problems. In cases such as that cited in my correspondence I believe that the efforts of members of our engineering societies should be used more advantageously.

I do not believe that we would be violating professional ethics to suggest that engineers take a more active position in the affairs of our country

and encourage them to express their views to their Congressmen.

Gustavus Auer.

(The correspondent's letter to his Senators follows):

Dear Senator:

On top of all the discouraging news about the housing shortage, the newspapers reveal that Mr. John W. Snyder is preparing a report intended to justify the export of 225 million board feet of lumber during the next three months. It has also been reported that 750 million board feet were shipped during 1945.

If the first quarter shipments are continued, it is expected that 900 million board feet will be exported for the year 1946. It is estimated that this amount is equivalent to the lumber required for the construction of 90,000 or more homes, about 20 per cent of the homes scheduled for construction in 1946.

This is shocking news to many thousands who are anxiously awaiting action on the construction program and who are desperately in need of housing relief.

The report states that the export quotas are established by CPA, the Foreign Economic Administration, Office of War Mobilization and Reconversion, and the Department of Commerce, and the program is intended to maintain export relations and to insure foreign production of such items as oil and sugar for import to our country.

Allow me to suggest that if this is true we had better have some more fact finding and appoint some professional engineers as the fact finders. My business is closely associated with oil and I would challenge the statement relative to the inability to arrange for oil importation.

I respectfully request that you act promptly to prevent the exportation of lumber and any other materials so critically needed in our housing and domestic construction programs.

Dear Editor:

As the first Treasurer of NSPE, and Executive Secretary during its pioneering days, perhaps you will grant me a few moments of your time.

If a man believes and his convictions are of sufficient strength he will direct his efforts into productive channels. Faith and initiative rightly combined produced your State Society and NSPE.

The man mostly responsible for organizing NSPE has written a book. While beautifully dramatizing the life of two great engineers, he has, in my humble opinion, presented us with a magnificent instrument to advance the profession.

"Builders of The Bridge," by D. B. Steinman, is really a masterpiece, and truly a fascinating and dramatic story, conducive to stimulating creative thought. It adds to the other books which are the ever-burning lamps of accumulated wisdom.

Percy B. Shelly's "Prometheus Unbound" appears to express it:

"To suffer woes which hope thinks infinite;
To forgive wrongs darker than death or night;
To defy Power, which seems omnipotent;
To love, and bear; to hope till Hope creates
From its own wreck the things it contemplates;
Neither to change, nor falter, nor repent;
This, like thy glory, Titan, is to be
Good, great and joyous, beautiful and free;
This is alone Life, Joy, Empire, and Victory".

It is a pity that we fumble so—here is a medium to bring in a dignified manner dramatically and forcefully to Society the aspirations, heartaches and burning desires of a truly great profession so that it may contribute even greater benefits to mankind.

A continuous effort to sell this book to members, their families and most important, to the public, by the American Engineer and the State Societies, would produce excellent results.

If this book were written by an outstanding member of the Medical or Legal Profession it would have the immediate and wholehearted support of the American Medical Association and the American Bar Association, as they know the meaning of professional unity.

This is a letter inspired only by my enthusiasm to advance our professional Society. Dr. Steinman's first knowledge of its existence will come after you have received it.

Williard S. Conlon, Engineer,
Dallas, Texas.

Fact Finding Report

(*Continued from Page* 9)

terests do not appear to clash with the interests of our Association."

Engineer Thrailkill then endeavors to obtain approval of the idea that activities of the above Local No. 17 be confined to sub-professional groups while the strictly professional groups be left to the Washington Society of Professional Engineers. A friendly exchange of letters with refusal on the part of Local No. 17 is the result of this effort.

Labor Unions "Boring In"

(5) The November, 1945, issue of "The West Virginia Engineer" published an address on "Collective Bargaining," given by Howard F. Peckworth before the annual meeting of the Indiana Society of Professional Engineers. Mr. Peckworth was formerly Assistant Secretary of the ASCE and has had great opportunity to study the national labor laws as affecting the engineer. In this article he briefly outlines the ASCE approach to the collective bargaining problem; explains the various national labor laws; and, shows how the labor organizations are extending their interest in professional groups and growing. He points out how often the initial organization embraces mostly sub-professionals. Later on this group seeks and obtains the right to bargain for the professional group as well.

Recently the American Association of Engineers has inaugurated a campaign to have the NLRA amended not to exempt engineers from the provisions of the above act, but to clearly classify technologists and technicians and professionals and non-professionals and, secondly, to restrict bargaining units to technologists as defined in the act.

Summary

This completes a brief digest of the information received by our Committee to date. It would seem that we can make the following statements:

(1) That the national labor laws now in effect are basic laws, some provisions of which affect the professional engineer.

(2) Engineers as individuals need enlightenment concerning these laws and their effect upon them.

(3) That a unified effort to prepare and disseminate information concerning these laws for the entire profession is most desirable and falls within the objectives of the NSPE as defined in its Constitution.

(4) That the NSPE institute a movement seeking to combine all the individual society efforts into a single effort to more quickly and economically reach this a common objective.

J. S. Kennedy, Chairman.

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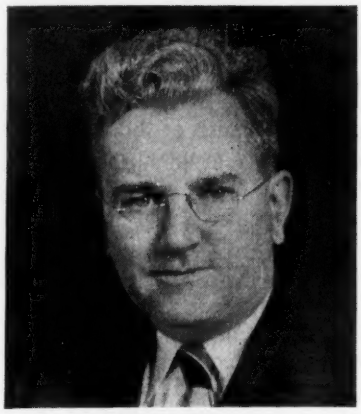
Kindly report any errors or omissions to the Editor.

National and State Society News



Leo H. Cleary

Leo H. Cleary Named To New Technical Post

Leo H. Cleary, Treasurer of the National Society of Professional Engineers, an electrical engineer with twenty-five years' experience with the electrical contracting industry, has been appointed Technical Director for the National Electrical Contractors' Association, effective January 1, 1946.

As Technical Director, Mr. Cleary will be in charge of research, statistics, the Manual of Labor Units and Cost Data for NECA and will serve as consultant to the Codes and Standards, Statistical and Cost Data Committees. He will also make surveys by mail and personal contact.

The position to which Mr. Cleary has been appointed is a new one. The employment of a Technical Director was one of the major points in NECA's 1946 Program which was approved by the 44th Annual Meeting at Cleveland.

Mr. Cleary is registered as a Professional Engineer in Connecticut, Pennsylvania, Maryland, Delaware and Ohio. He is a fellow of the American Institute of Electrical Engineers, and now is serving as Secretary of the AIEE, Washington section; a member of the Society of Military Engineers; a member of the District of Columbia Council of Engineering and Architectural Societies; a member of the Washington, D. C., Building Congress and has served on numerous committees and boards devoted to the development of the engineering profession.

Mr. Cleary's many friends in the Engineering Profession will wish him every success in this new position.

International Engineering Congress

Engineers in the United States are being circularized with an announcement of an International Engineering Congress to be held in Paris, France, June 17-22, 1946. The Congress is being organized by the International Federation of Engineers (now being formed).

The purpose of this Congress is to provide an opportunity for the interchange of ideas among engineers on technical as well as economic and social questions which particularly concern engineers and technicians the world over. The promoters feel that the collaboration of engineers on an international scale will contribute to a stable peace and to world progress.

During the Congress the Articles of an International Association of Engineers will be on the agenda.

Inquiries may be addressed to Secretariat du Congres Technique International, 27, Rue de Constantine, Paris (7).

Coming National and State Society Events

The present "dead-line" on copy to go into the American Engineer is the fifth of the month previous to that of issue. This date will be moved backward to an earlier one, as conditions permit. Program committee members can cooperate helpfully by notifying us of State Meetings of importance, as promptly as possible. National officers or Directors who have speaking engagements at any State meeting, will assist the editor by reporting the date, time, place and occasion of the meeting, together with the title of the address to be given. State and National meetings so far reported are as follows:

Feb. 14-15, Ohio State Society of Professional Engineers, Convention, Akron.

February 20, A.M., Minnesota State Council meeting, Minneappolis. P.M., Minnesota State House of Delegates.

February 21, A.M., Minnesota House of Delegates and Annual Assembly meeting; Minneapolis. Noon, luncheon to be addressed by President Ritchie Lawrie.

February 21-23 inclusive, Annual Convention and Equipment Exhibition of the Minnesota Federation of Engineering Societies.

Mar. 15-16, New Jersey State Annual Convention, Newark.

Mar. 29-30, NSPE Board of Directors' Meeting and Conference of Presidents of State Societies, Columbus, Ohio.

Oct. 27, NSPE, Board of Directors Meeting, St. Louis.

Oct. 28-29, Meeting of the NCSBEE St. Louis.

Dec. 6-7, NSPE Annual Convention and Third Annual Meeting of the Board of Directors, Atlanta, Ga.

KANSAS

Alex. Van Praag, vice president of the NSPE speaks at the Annual meeting of the Kansas Society of Professional Engineers, at Topeka, February 6th.

The Kansas Society of Professional Engineers closes the old year with 56 members on the roster, and every one paid up to date. We organized 18 months ago with 32 Charter Members. Death took one of them. 25 new members have joined us. No one has ever dropped out, so there is a net gain of exactly 75 per cent since organization. There are about 400 professional engineers actually resident in Kansas. That gives us possibly 15 per cent of the eligibles, better than the national average but far below what we need if we are to be really effective in carrying on our work. At that, our Society has been accorded significant recognition already.

MINNESOTA

The Minnesota Federation of Engineering Societies has announced the program for its orientation course for seniors, to be held in the Institute of Technology, at the University of Minnesota, January through March. The following is a condensed outline of the subjects to be considered:

January 15th, "The Engineer's Place

in and Responsibilities to Society," by Dr. R. Price.

January 22, "Professional Ethics," by S. L. Stolte.

January 29, "Labor Laws," by Thomas McCabe.

February 5, "Registration of Engineers," by George Shepard.

February 19, "The Engineer in Public Service," by L. N. Thompson.

February 26, "The Engineer in Private Practice," (consulting), by W. H. Wheeler.

March 5, "The Engineer in Administrative Organization," by J. A. Colvin.

The outline was developed in conjunction with Dean S. C. Lind and Assistant Dean Elmer W. Johnson, of the Institute of Technology.

This program is more or less of an experiment, but is being offered with every reason to believe that it will be highly successful and will be continued from year to year.

MISSOURI

The Membership of the Missouri Society of Professional Engineers reports an active membership totalling 1,187. The report calls attention to the large number of reinstatements in membership during the past year. It is believed also that the December 1945 Convention in St. Louis has been the means of calling to the attention of many prospective members, especially in the St. Louis area, the exceptional value of the MSPE to the Engineering Profession and to the individual engineer.

The Missouri State Society's Legislative Committee recommends that each Chapter in the State have its own Legislative Committee, the chairman of which would be a member of the State Committee.

NEBRASKA

There is a strong movement getting under way in Nebraska for the formation of a State Society of Professional Engineers. Many members of the present Nebraska Engineering Society believe that it may be practicable for that organization to affiliate with NSPE. The new President of the NES has listed such affiliations as one of the leading subjects for study during the coming year. There are many details to work out when an old established society attempts to reorganize in this manner and it will take a lot of time and work, but Nebraska seems to be on the road up.

NEW JERSEY

The municipality of Teaneck, New Jersey, has passed an ordinance under which the Building Inspector must be either a licensed Professional Engineer or a registered Architect, and the municipality of Hoboken proposes to organize a Bureau of Engineering.

This is great news because it shows that authorities are beginning to realize that certain positions, the duties of which call for technical and professional training and experience, can be properly filled only by a professional who is recognized by the State through its licensing laws. In this manner, the public and private welfare of our citizens are best served.

The members of the State Boards of Registered Architects and Professional Engineers and Land Surveyors in New Jersey are to be highly commended for their joint and harmonious endeavors on this subject. The New Jersey Society has fully endorsed their efforts and feels that before long many more municipalities will adopt similar ordinances.

New Jersey has just completed an intensive membership campaign and, as a result, now boasts of 1,073 active National members of whom 1,010 have paid dues for the year 1945. The total State membership is now 1,124. This increase has entitled New Jersey to a third National Director at the meeting held in Cleveland on December 7th and 8th. Engineer Joseph M. Cerreta of Roselle Park was appointed to this post.

New Jersey has scheduled its first post-war full-scale convention for March 15th and 16th, 1946, at Newark. A major feature will be the showing of engineering, industrial and allied exhibits, and from all indications an outstanding success is in the making.

At a recent executive session of its Board of Trustees, the New Jersey Society voted to waive 1946 dues for returning service men. They plan to follow this up with a resolution to the National Headquarters which was scheduled to be heard at the Cleveland meeting.

NEW YORK

The New York State Society of Professional Engineers is to be congratulated in having chosen as its executive secretary, Mr. Frank J. Duck. Mr. Duck has had broad experience in several engineering fields and has had considerable public relations experience also, which should well suit him for carrying much of the responsibility for the heavy program being planned by the New York Society.

While the State legislature is in session, Mr. Duck will spend much of his time in Albany with Mr. Robert C. Wheeler, chairman of the Society's Legislative Committee. It is expected that close attention to the legislative matters will reflect favorably on the social and economic status of the professional engineer and surveyor in the years to come.

It is planned to have Mr. Duck visit all State Chapters at least once a year. The entire membership of the Society of Professional Engineers, National as well as State, will wish the best of success to New York's new executive secretary. Mr. Duck may rest assured that every Chapter in the State is behind him and will cooperate with him to the fullest possible extent.

Director Park W. Judah, of the Erie County Chapter has been promoted to manager, Industrial Division, New England District of the Socony-Vacuum Oil Company, with residence in Boston, Mass. In this letter of resignation from the Chapter he wrote: "It is with considerable reluctance that I sever my many associations here, not the least among which is our Society. Its continued growth and success is assured in the hands of the men now directing its affairs."

See page 29 relative late announcement N. Y. County Chapter.

"War Experiences in India and with the Atomic Bomb," was the subject of an address by Major General Thomas F. Farrell, given before the "Zone 5" Area meeting on January 15th, at the Aurania Club, Albany. Major Farrell recently returned from the Pacific and did much work in connection with the atomic bomb. The Albany, Schenectady and Rensselaer County Chapters joined in the meeting. Many Professional Engineers from the Capital area were in attendance.

"The Engineer's Part in Solving Today's Management Problems," was the subject of an address given on January 17th at a meeting of the Engineering Foundation of Buffalo. The speaker was Dr. Lillian M. Gilbreth, consulting engineer and professor of management, at Purdue University. The engineering societies cooperating in this meeting were: American Institute of Electrical Engineers; American Society of Civil Engineers; American Society of Mechanical Engineers; The Engineering Society of Buffalo, Inc., N. Y. State Society of Professional Engineers (Erie County Chapter); Niagara Frontier Society of Industrial Engineers, and the Society of Automotive Engineers.

OHIO

The membership campaign in Franklin County has resulted in an increase or 122 members for the year of 1945. This places the Chapter total at 374 members. This means Franklin County is ahead of both Akron and Cleveland, where the membership is 359 and 358 respectively.

The Functional Group known as the Highway Engineers Section of the Ohio State Society of Professional Engineers made a survey of the whole State Highway Department for the purpose of showing the percentage of membership in the various Highway Departments. This survey shows that over 75 per cent of the 400 engineers in the Department belong to the Ohio Society of Professional Engineers. Some of the boys on membership committees have been on their toes.

The Refresher Course sponsored by the Cincinnati Chapter, in cooperation with the Unievrsity of Cincinnati Evening College, is the first cooperative effort of this nature we have heard of. It is an idea that ought to spread.

On January 4, 1946, the Board of Trustees of the Ohio Society of Professional Engineers adopted the following resolution: "Whereas it has been brought to the attention of this Board that various public authorities requested engineers to submit in competition their terms for preparing plans, specifications and other documents for engineering projects and frequently request that such proposals be accompanied by an estimate of the cost of the proposed project, and in some instances, requiring the posting of a performance bond, and, Whereas such procedure in generating competition is contrary to recognized practice in retaining Professional services, is inconsistent with professional ethics, is contrary to law, tends to eliminate qualified and even outstanding engineers and therefore is not in the public interest—THEREFORE, Be it resolved by this Board of Direction of the Ohio Society of Professional Engineers that this Board, acting on behalf of the Society, record its disapproval of such procedure, and

Be it further resolved that this Board recommend that public authorities and others desirous of engaging professional engineering services, select the engineer from those available on the basis of qualifications and professional reputation to execute and perform work of the type under consideration."

A year ago Chairman Robert N. Waid, of the Board of Registration estimated that about 2,000 applications would be filed in Ohio in 1945. Actually over 6,500 applications were received. Of this total over 3,000 were filed in December. Speaking on this accomplishment at the January 4th meeting of the Board of Trustees of the Ohio Society, Executive Secretary Lloyd A. Chacey took credit in the name of the OSPE. In view of the campaign on behalf of a large registration carried on by the State Society, the credit seems justified.

The following is reproduced from the "Ohio Engineer," and seems worth careful consideration by all local Chapters and State Societies:

A Minnesota resolution is being considered by the NSPE membership committee. The Ohio Board of Trustees heartily supported the resolution since Ohio is well on her way to establishing that spearhead and suggests that all other State Societies do likewise.

WHEREAS, the State Societies and NSPE are earnestly working for a unified engineering profession;

WHEREAS, registration of all qualified professional engineers is aprerequisite to membership in NSPE;

AND WHEREAS, membership in our state and national professional engineering societies of all, but not less than a majority of all, registered engineers is a must to properly gain our objectives;

NOW, THEREFORE, be it resolved that the NSPE Membership Committee spearhead an aggressive membership campaign, wherein every member of NSPE get at least one new member in the year 1945;

BE IT FURTHER RESOLVED, That we as a professional engineering organization do not even ease up in membership activity until our roster is 100,000 strong.

OKLAHOMA

The Engineers' Club of Tulsa evidently has a program committee that believes in planning its work well in advance. It looks like an idea worth following. Note the programs already arranged for the month of February:

February 5th — The U. S. Department of the Interior is furnishing a sound film, "Lubrication," filmed in conjunction with the Sinclair Refining Co. Shows primitive methods of overcoming friction, describes theory of friction and application of types of oils and greases to various mechanical elements. A complete treatment of subject of lubrication. Mr. Chas. S. Larkey will preside.

February 12th — Professor W. L. Nelson of the School of Engineering, University of Tulsa, will discuss "Tulsa Quartermaster Petroleum School," covering training he gives in his T.U. course to the Quartermaster personnel enabling them to determine the kind and quality of products encountered in combat area, both of our manufacture and that captured from the enemy. Mr. F. M. Carroll will preside.

February 19th — Showing two war films. "For Distinguished Service" shows the uses of 100 octane fuels in actual combat. "Invasion — Nazi Version" is an untouched captured German film showing their version of Allied invasion of Europe. Mr. Wm. R. Wooten will preside.

February 26th — Mr. L. W. Cashdollar, Chief Metallurgist for Hinderliter Tool Co., and a new member of the Club will discuss "General Metallurgical Control of Steel," a complete discussion of making steel from scrap to finished product with a clarification of common metallurgical terms applied to heat treatment of the metal. Mr. Cashdollar will illustrate his talk with slide projections. President W. A. Melton will preside.

Following the time honored custom of alternating between Tulsa and Oklahoma City, the annual meeting of the Oklahoma Society of Professional Engineers was held at Tulsa, January 11 and 12.

"The Tulsa Engineer," issued monthly by the Engineers' Club of Tulsa, publishes each month a list of the members having birthdays during the month, extending greetings and "Happy Returns of the Day." Not a bad idea.

PENNSYLVANIA

The year 1945 has been an important one for the Professional Engineer in Pennsylvania. The standing of the Professional Engineer has been recognized and strengthened by the recent act of the State legislature. With the war's ending and peace between industry and labor, vast opportunities will be open to the Professional Engineer in the Post-War era. The Harrisburg Chapter has increased its membershop 20 per cent. Over 30 per cent of the new registrants have joined. With a good increase in membership and possibly a small increase in dues to help make the meetings more interesting, we shall go places in 1946.

A resolution is to be presented to the NSPE, from the Harrisburg Chapter, recommending that an investigation into the wages and salaries paid to technicians, semi-professional engineers and Professional Engineers employed by the Commonwealth of Pennsylvania, with the thought in mind that action be taken to bring wages and salaries up to the level of the salary schedules of the PSPE; and calling attention to the recent action taken by two departments of the Commonwealth in recognizing the salary schedules of the Society for outside engineering and architectural services.

At the December meeting of the Philadelphia Chapter, membership in the Chapter was increased by the election of 12 full members and seven affiliates.

Dr. Philip Q. Roche, M.D., chairman of Board of Censors, Philadelphia County Medical Society discussed, "Ethical Practice in Organized Medicine. Dr. Roche stated that about 80 per cent of those eligible were members of his Society and many of the 20% were members of the Homeopathic Society—an excellent goal for the Professional Engineers!

Chairman Lauter arranged the usual Social Hour and refreshments, after the discussion.

Our guests included Dr. Ralph Getelman, Secretary, and Mr. William H. Erwin, Executive Secretary, Board of Censors, Philadelphia County Medical Society.

New members, elected during the year 1945, were welcomed into the Pittsburgh Chapter through the medium of a "Smoker" at the Roosevelt Hotel on December 20, 1945.

Reginald M. Atwater, M.D., Executive Secretary of the American Public Health Association, in an address in Pittsburgh on November 30 to various local health and social agencies, made the astonishing statement that there are only 10 engineers employed in Public Health Service in the whole State of Pennsylvania. Two of these engineers, Dr. Atwater said, are employed by local health agencies, and eight by State agencies.

Dr. Atwater said further that according to the Standards of the American Public Health Association, ONE HUNDRED ENGINEERS SHOULD BE EMPLOYED BY PUBLIC HEALTH AGENCIES IN THE STATE OF PENNSYLVANIA.

The Pittsburgh Engineer respectfully refers this matter to the officers of the Pennsylvania Society of Professional Engineers and its local Chapters, for action.

The January meeting of the Philadelphia Chapter was entertained by an address, "Archeology as Applied to Engineering," by the Chapter's former president, Solomon M. Swaab, Consulting Engineer. The lecture meeting was preceded by a dinner and a social hour. President Haydock appointed the Nominating Committee for the annual election of new officers, also the Auditing and Budget Committees. Nine new members and two affiliates were elected. Several additional applications were received too late for action at this meeting.

TEXAS

The Texas Society of Professional Engineers will have a fulltime Executive Secretary in 1946. The drive to raise funds for financing the expanded administration staff in the Society's office at Austin has now raised the minimum sum required — $13,000. Members and friends of the Society have contributed to this fund by subscribing to the special memberships provided in the T.S.P.E. Constitution, which are:

Contributing Membership, annual dues $25
Supporting Membership, annual dues $100
Sustaining Membership, annual dues $1,000

One Austin engineering firm is now a Sustaining member (annual dues $1,000). Several individuals and firms are Supporting Members (annual dues $100) and many of the members have subscribed as contributing members (annual dues $25). In addition to the Special Memberships, contributions of less than $25 have been received.

The campaign for raising Executive-Secretary fund is still in progress in all Chapters except Travis Chapter. The campaign committees of Travis Chapter at Austin moved into action early. Their quota of $2,000 was raised quickly, and on December 1, $4,400 had been raised. Some committee members have not submitted final reports but Travis Chapter expects to contribute $5,000 to $6,000 to this special fund. Over 75 percent of Travis Chapter members have subscribed to the Secretarial Fund. Excluding the $500 and $1,000 contributions, Travis Chapter has averaged more than $35 per member.

Funds Coming in Rapidly

Mr. O. R. McElya, vice-chairman of the drive in Dallas, is confident that the North Texas Chapter will oversubscribe its quota of $5,000. The drive at Dallas is now approaching that figure. Reports from the San Jacinto Chapter at Houston indicate that the drive there has not yet gotten into full force. The Houston engineers quota is $6,000. Although only $1,000 has been reported from Houston, officers of that Chapter feel confident that their quota will be reached or exceeded. The last report from Bexar Chapter reported $1,600 towards a $2,000 quota. The other Chapters report fair success, but they all expect to meet the required quota.

John D. Miller, Chairman of the campaign drive, is confident that final reports from all Chapters will push the fund well over the $20,000 mark, or the sum needed to properly maintain the business office of T.E.P.E.

Eleven Chapters in Texas

T.S.P.E. now has eleven chapters. Three thave been organized in 1945. The El Paso and the Panhandle (Amarillo) Chapters were organized during the summer of 1945. Brazos Chapter (A & M College at College Station), the youngest, was organized in November.

T.S.P.E. membership is approaching 1,200, and has increased over 30% in 1945. The membership is expected to climb to 2,000 or more in 1946.

Engineering services and counsel are featuring prominently in the economic affairs of the State and the Nation. Local, State and national legislation directly affects, and in many instances, controls the engineers' actions. It is imperative that engineers keep closely in touch with such legislation and properly inform the respective legislative bodies as to the engineers' position in such matters. To perform these functions, it is absolutely essential that T.S.P.E. maintain an administrative organization that can represent the engineers in a professional and business-like manner.

WISCONSIN

Ritchie Lawrie, Jr., President of the National Society of Professional Engineers has a very full schedule of speaking dates. He spoke at Reading on January 12th; at the Wisconsin Annual Meeting on January 24th, at Milwaukee. He is scheduled to speak at the Minnesota Association meeting in St. Paul on February 20-21.

"The Federation of American Scientists" is the name of a new organization which has just opened up offices in Washington. Many of the technologists who contributed to the turning out of atomic bombs, will be active in this organization. We hope to report more fully on the purposes of this group in future discussions.

Undoubtedly our scientists are geniuses at blowing the world to bits in our alleged efforts to preserve democracy. The skill of our technologists fails us when the time comes to put the pieces together again. Or can it be that the rulers of the world fear the Klieg light of Scientific Method directed toward the social sciences?

The "law of supply and demand" in the minds of some people, means they want a "law that would keep down supply and increase demand."

National Issues—Washington Economic and Political Front

Years ago Woodrow Wilson described our political system of controls as "government by pressure groups." Thomas E. Dewey, of New York, months before he started his campaign for the Republican Nomination for President, was reported as saying, "If I ever get to the White House I am going to abolish pressure groups." "Pressure" or "power" politics is the outstanding fact behind almost everything that happens or comes out of Washington. If you want to understand the reason for decisions made by any government agency, you want to look for the source of the pressure. The things that just don't make sense on any other basis, become clearer when we appreciate the motivations behind what is and is not done at all political levels.

The unfortunate fact is that while public officials are supposed to represent the "public" — the voters — the cold truth is that the general public is one group for which little real pressure is or can be exerted. The "representatives of the public" are the victims of this pressure from every quarter except from the general public. These pressures come from hundreds of "organized minorities" each with some sort of special privilege or at least special purpose to gain, usually at the expense of other groups, and nearly always at the expense of the general public. The group that isn't able to exert some kind of special pressure, and that includes the general public, is certain to get the small end of every deal.

Alien Pressures

Our American foreign policy, (if anything so fluctuating can be called a policy) is strongly dominated by pressures from within our own borders. Millions of voters, organized on the basis of their national origins, are constantly putting pressure on Congress and on the Administration on behalf of their special interests or point of view. Only when we understand the subtlety and the potency of these pressure, can we get any realistic appreciation of official attitudes toward Germany, Japan, Russia, Spain, Argentine, Italy, the Balkans and all the rest.

These multiple pressures explain in part what seems to be the extreme reluctance of the Administration or of Congress to take any positive action on controversial issues, until conditions arise which make some decision absolutely unavoidable. The pressure system explains why everyone tells you, "if you want anything done, you've got to turn on the heat." The old-timers in the game insist that the political formula is to "do nothing," in the face of conflicting pressures.

"Pitiless Publicity" Is Effective

These pressures also explain why government officials become very active when issues are brought out into the light through newspaper publicity. Some groups get more than their share of what they go after because they control good channels of publicity.

To understand the Washington political situation, it is necessary to know what politicians mean by the terms they use in their announcements in interviews and speeches. "The public," in political parlance, means generally, that group of pressures which are considered most potent at the moment on particular issues. The expression "public opinion," never means to the politician what it does to the general public. Any astute politician will tell you (in private) that there is "no such thing as public opinion" of any real consequence, except that which has been manufactured, more or less synthetically, by some one or more of the pressure groups. Opinion may be classified as that of labor, management, church, racial, ethnic, ideological (both left and right wing), etc., with dozens of subdivisions of most of them. Westbrook Pegler once said that there is no such thing as a "labor point of view," except as that view has been decided upon and then spread by labor leaders. Exactly the same may be said with reference to the points of view represented by the various pressure groups. Consciously maybe, but more often unconsciously, we fall under the influence of the leadership we follow, and we act, think and vote pretty much

in line with the indoctrination given to us. Not to appreciate this, is to find great difficulty in understanding what is behind the apparent vagaries of official attitudes in government.

Policy Crisis Developing

The administration is being subjected to considerable rather critical scrutiny at this time. Its rather halting domestic policy on such matters as price controls, rationing, reconversion, wages, etc., is the basis of a good deal of criticism. If, as some observers predict, Mr. Truman may not get as much cooperation from Congress as in the past, this may be accounted for by the fact that the pressures do not come equally from the same direction on all branches of the government.

Even those who are classed as personally very friendly to the President, neverthless feel that he needs more able assistants and advisors. Drawing very heavily upon his circle of personal friends for his close advisers as did Mr. Roosevelt before him, Mr. Truman has probably made some mistakes in these selections which further experience will force him to change. With so many vital and far-reaching decisions to make, the White House staff needs to include a highly organized group of specialists and experts, with a few good administrators. No one man can possibly know all the angles to all the problems.

The Orientals have a saying which applies to the organization of governmental as well as business institutions: "You cannot buy wisdom abroad if there is none at home." No matter how much expert advice is available, there must be someone at the top to sift true from the false, the prejudiced from the fair, the practical from the wishful thinking. Unless Mr. Truman is able to strengthen his present staff in the near future, even his best friends admit he is headed for plenty of trouble. That is true with regard to both the foreign and domestic fronts.

Labor Problems

The labor problem looms big on the horizon. Shrewd guessers believe most of the strikes will be settled one way or another without any serious disruption of the national economy. Labor is almost certain to compromise on its wage demands. As usual the increased cost is likely to be passed on, in whole or in part, to the consuming public. Historically that is the way such problems are finally settled.

The fact-finding technique in settling wage controversies is not likely to get far without the approval of Congress, which is always heavily pressured from business interests which are certain to be cold to any innovations of this nature. They look upon it as at best "an unwise trend in labor disputes."

A most significant fact about the Labor-Management Conference's failure to accomplish anything, was that the representatives of management were almost as sharply divided on matters of policy as were the unions.

The "full employment" bill, after a thorough job of "face-lifting," is receiving very little labor support.

Washington is really concerned about the extent of the unrest among the GI's who want to get out of the service. Insiders attribute the difficulty to a number of causes, of which the natural desire to go home is only one. While the fighting was going on the army never thought it necessary to "sell" the men on the necessity of the tasks they were required to perform. That typical army "do as you're told and ask no questions," carried over into the post-war period, has reacted unfavorably on the war-weary soldiers. This, coupled with stories reaching servicemen about inefficiencies in the transport and in separation centers here, plus political ineptitudes of great variety relating to the conduct of both the war and the domestic economy, has created a psychological situation which is recognized here as being dangerous.

More than a year ago the prediction was freely made in Washington that any mishandling of the demobilization program might very easily determine the result of the next presidential election. Efforts to correct this situation will probably be made "too little and too late," if we may accept the verdict of seasoned Washington newspapermen.

"Economics" of Foreign Loans

The loan to England probably will be approved, after much pointless talk. Consensus is that objectors gave "more heat than light." Fact is that the immediate and possibly also the long range benefits of the loan will prove to benefit American Industry quite as vitally as it will help England. Congress is expected finally to approve this bill, probably with this thought in mind. Some economists call the loan a "dole to American business." Others say its a "gift" to the British. "Who knows," others say, "what either England or America may be like, if the next 50 years is anything like the last—or maybe worse?" The final attitude is, "so what?"

It is generally believed that Russia and China will be next in line for loans—and not at all because we love our late Allies. What Congress does usually is with an eye to its immediate effect on our American economy. Of course in granting loans which means letting the federal government hold the bag, they have behind them some internationally known American economists who maintain, "Government loans never need be paid!" In such quarters, the man who asks about "repayment," is accused of lacking faith in our system of economy!

On the foreign diplomatic front, the indication is that we are likely to see an improvement in the Chinese situation. Our hands off policy in reference to Java (also labels off our tanks and guns used in suppressing the revolutionaries) is being compared with the President's recent statement of foreign policy, in which he asserted our unwillingness to recognize any government imposed by force. It is recognized here that a discrete silence on policies we maintain with reference to Balkan countries which we have no intention of applying to other parts of the world where Russia is not a factor, would be much wiser at this critical time.

The Mission to Moscow

Secretary of State Byrnes' Moscow agreement, if correctly reported, would seem to set at rest local gossip to the effect that the UNO plans to build Japan up into a second rate power, as a buffer against Russian expansion in the East. Certain well informed, but possibly mildly isolationist circles here still insist that it was the effort to build up Hitlerism, following the depression of 1929, also as a buffer against Russia, that made World War II inevitable.

One of the most brilliant newsmen in Washington has his own explanation of "who was to blame" for Pearl Harbor. He recalls that our American officialdom took no positive action at the time of "China's 'Pearl Harbor'."

(*Continued on Page* 30)

A.I.E.E. Report on Collective Bargaining

(*Continued from Page 8*)

and from assisting in the formation of such organizations.

The committee believes that course of action 3 should not be followed except under unusual circumstances. It is true that professional organizations have intervened for their members as a friend of the court. It is quite possible that the National Labor Relations Board may continue to listen to their contentions in specific situations. The committee has been advised on good authority that intervention probably would not be granted to professional engineering societies, if the purpose were to help their members to keep out of a particular union or to tell the Board how engineers should be organized.

The Board takes the position that a group of employees may organize in any way it sees fit as long as it keeps free from employer domination. It also maintains that elections are held not to determine whether employees want to stay out of a union but to ascertain the wishes of employees concerning a union or several unions seeking certification. Intervention may be justified in certain instances especially where the engineering members of a bona fide organization of professional employees request the Institute to intervene in their behalf.

Under such circumstances the Institute would have an interest in the case, because it would be assisting certain employees involved in the case to obtain what to them is a satisfactory bargaining unit. It then could take the position that engineers or professional employees, because of their training, responsibility, nature of work, and so forth, are a homogeneous group for purposes of collective bargaining.

Must Establish Interest

The committee has been informed that engineering associations, unless they can establish an interest in the case, probably would be allowed to intervene as a friend of the court only in very rare instances, such as an occasion when the Board is hearing oral arguments in Washington on the record of a particular case, previously heard in the field by a trial examiner, in which the question before the Board is a difficult one involving considerations of wide public interest. A case in point was the hearing for the purpose of oral argument held in connection with foremen's unions at which a number of outside organizations were permitted to intervene and file briefs. Thereafter, the foremen's cases were handled like the ordinary run of representation cases.

It should be pointed out that intervention will have little value unless it is undertaken early in the process—certainly before the situation becomes crystallized.

In order to eliminate duplication of effort and conflicting testimony, it may be advisable for the various engineering associations to establish a joint committee which would serve as a clearing house for these associations and to arrange for a common counsel for participating associations in those cases in which intervention is sought. Under such an arrangement each engineering association could elect to intervene in any particular case with the minimum of expense and wasted effort. It would have the additional advantage of reducing to a minimum the confusion and irritation, as far as the National Labor Relations Board is concerned, that undoubtedly would result from independent action on the part of each association. This procedure would enable the Institute: (*a*) to join with other engineering associations, (*b*) to act alone, or (*c*) to refrain from any action, depending upon the issues and circumstances in a given case.

Monograph Recommended

With reference to course of action 2, the committee believes that the preparation of a monograph entitled "Collective Bargaining and the Professional Employee" should be prepared for the information and guidance of members of the AIEE. The exact nature and specific content of this monograph should be given careful study and be prepared under the direction of a committee of the Institute. It might well include:

1. Statement of the problem facing the professional employee.
2. The American labor movement.
   - (*a*). Why it came into being.
   - (*b*). Its aims and goals.
   - (*c*). Its structure: various types of local and national unions; the AFL; the CIO; other important national organizations.
   - (*d*). Its functions, policies, and tactics.
   - (*e*). The extent of organization.
3. The National Labor Relations Act (Wagner Act).
   - (*a*). The rights and responsibilities of professional employees under the Act.
4. Collective bargaining.
   - (*a*). Function.
   - (*b*). Subject matter.
   - (*c*). Techniques.
5. Courses of action open to engineers and other professional employees to protect their own interests.

Determining the Bargaining Unit

The National Labor Relations Act guarantees employees the right to self-organization, that is, to form or join organizations and to bargain collectively through representatives of their own choosing. The Board has taken the position that any employee organization has complete freedom to define its membership qualifications as it sees fit, as long as it keeps free of employer domination. In other words, the composition of a labor organization, even though it includes professional workers, foremen, and employers in its membership, is of no concern to the Board, unless the organization is employer minded or employer dominated. Employer-initiated and employer-dominated unions are illegal under the Act and, therefore, have no standing before the Board.

The Board's primary concern in representation disputes is with the character of the bargaining unit. It is important to note that the bargaining unit and the membership of a union need not be co-extensive and frequently are not. An employee organization need not bargain for its entire membership nor even for any of its members. It may bargain for employees entirely outside of its membership. As a matter of fact, collective bargaining for a particular group of employees may be done by an outside individual, a small committee, a union, or some other association. All that the Act requires is that the representative or representatives be of the employees own choosing and be free of employer domination.

Disputes Involve Bargaining Unit

Many of the disputes before the Board arise over the bargaining unit claimed by the representatives of the union seeking recognition.* In all representation cases the Board is required by law to decide specifically the question as to what bargaining unit is appropriate.**

Where there is only one organization involved and the organization has been designated by approximately 30 per cent of the employees in the bargaining unit, the Board will hold an election and, unless the employing company presents valid objections, certify the organization, should it win the support of the majority of the qualified

* The Board also handles complaint cases involving charges of employers violation of the provisions of the Act relating to unfair practices. These disputes, however, have no bearing on the issues under discussion.

** See Appendix I for distinction between "bargaining unit" and "bargaining agent."

employees voting. It is where two competing labor organizations claim identical or overlapping jurisdiction that the Board must decide which one shall be the bargaining agent. In doing so the Board's chief aim is to bring together in a single unit those employees who have a community of interest which is likely to further harmonious organization and facilitate the aims of collective bargaining. Conflicting claims, as well as justifications which go back over a period of years, sometimes make the determination of a bargaining unit a difficult task. The Board has found it necessary, therefore, so set up a number of criteria to be used as a guide in the making of a decision. These criteria may be summarized as follows:

A Criteria Guide

1. The history, extent, and type of organization of employees.
2. The history of collective bargaining.
3. The history, extent, and type of organization of employees in other plants of the same employer, or other employers in the same industry.
4. The skill, wages, work, and working conditions of the employees.
5. The desires of the employees.
6. The eligibility of the employees for membership in the union or unions involved.
7. The relationship between the unit or units proposed and the employer's organization, management, and operation.
8. Whether an association of separate employers is in existence exercising employer functions, and having a history of collective bargaining on a multiple-employer basis.

No precise weight is given to any of the above criteria. Generally several considerations are involved in each case. The Board holds that the complexity of the problem precludes the use of rigid rules in the determination of the unit appropriate for the purposes of collective bargaining.

Considerable weight, however, is given to the desires of employees in representation cases in which rival organizations have advanced conflicting jurisdictional claims. In such situations the Board applies the Globe doctrine—so named because the principle was first enunciated in the case of the Globe Machine and Stamping Company and the Metal Polishers Union, Local Number 3, and others. Under this doctrine the employees are permitted to decide by vote whether they want a separate craft union or desire to be included with other employers in a larger bargaining unit. If the majority of a given craft or related crafts vote for a craft union, the Board rules that the craft shall be the bargaining unit. If the majority vote for the larger bargaining unit, the Board denies separate craft representation. Incidentally, the American Federation of Labor now is advocating an amendment to the Wagner Act which would make this procedure a part of the Act.

Definition of Professional Employee

Because organizations of professional employees seeking certification may find themselves facing competing unions also claiming jurisdiction of salaried employees, a definition of "professional employee" is necessary.* The distinction between "professional status" and "nonprofessional work" was a subject of controversy in the matter of Shell Development Company, Inc., and the International Federation of Architects, Engineers, Chemists, and Technicians, case XX-*R*-552. It well may be an issue in future cases before the Board.

The committee suggests the following definition: A person employed in a bona fide professional capacity is any employee engaged in:

1. Work predominantly intellectual and varied in character, as opposed to routine mental, mechanical or physical work.
2. Work requiring the consistent exercise of discretion and judgment in its performance.
3. Work of such a character that the output produced or the result accomplished cannot be standardized in relation to a given period of time.
4. Work requiring knowledge of an advanced type in a field of science or learning customarily acquired by a prolonged course of specialized intellectual instruction and study, as distinguished from a general academic education and from an apprenticeship, and from training in the performance of routine mental, manual, or physical processes.
5. Work predominantly original and creative in character in a recognized field of technological endeavor involving invention, imagination, or talent.
6. Work of a nonprofessional character when scheduled for students or graduates of accredited colleges or universities as a part of their training and education to acquire a professional status as defined herein.
7. Work of a nonprofessional character performed temporarily as a part of a professional investigation.

It should be stated that criteria 1, 2, 3, and 4 have been taken without change from the definition of professional employee as defined by the Wage and Hour Division. Criterion 5 also is taken from this report but in a slightly modified and abbreviated form, while 6 and 7 have been added to meet the requirements of junior engineers who are in the process of attaining a professional status, or engineers who have been assigned temporarily to nonprofessional work in order to further their research or investigation.

Status of Young Engineers Doing Non-Professional Work

The Committee has given serious consideration to the status under the National Labor Relations Act of young engineers who may be attending or who have graduated from an accredited engineering school but who, as a part of their training, are working on nonprofessional jobs. The question is frequently asked—Would young engineers on nonprofessional jobs be compelled to join organizations of nonprofessional employees while performing such work, or would they be permitted to join an organization of professional employees if they desired to do so?

In answering this question it should be pointed out that engineers could be compelled to join a labor organization only if a closed or union shop prevails in the bargaining unit in which the engineers are performing nonprofessional work. The Board does not order employees to become members of labor organizations. Its task is to decide what the bargaining unit shall be in specific situations which are brought before it. In determining the bargaining unit, the Board must decide whether engineers shall or shall not be included.

The action to be taken by the Board probably would vary with the circumstances in each case. If a union and

* A definition of a professional employee helps to define the jurisdiction of a professional-employees organization and should be an important guide to the NLRB in determining an appropriate bargaining unit.

an employer both agreed that young engineers on nonprofessional work should be included in a particular bargaining unit then the Board as a rule would accept the arrangement Again, if a union at the request of the employer agreed to exclude such employees, the Board in the absence of any protests probably would accept this disposition of the matter. If a union insisted upon the inclusion of such engineers in a bargaining unit, the Board presumably would apply the criteria listed above and make a decision on the basis of the factors prevailing in a given situation. If young engineers in this category had been members of a bona fide union in the plant or industry for a period of years, the Board undoubtedly would be reluctant to disturb the prevailing arrangement.

Where no precedent had been established and a majority of the engineers had refused to sign membership cards but instead insisted upon membership in an association of professional employees, the Board in all likelihood would give careful consideration to their request. In such a situation resort to the Globe doctrine would seem to be the logical course of action.

We may conclude, then, that engineers can be compelled to join a labor organization only where they have been assigned to a particular bargaining unit and a closed or union shop has been established for that unit by voluntary agreement between the union and the employer.

Types of Labor Organizations Open to Engineers

One of the problems which would have to be faced by engineers is the selection of the type of labor organization which they would wish to represent them when some form of organized representation becomes desirable. A number of possibilities present themselves. Each of the types of organizations listed below may or may not be associated with a national labor organization or a national federation of labor unions. The various possibilities are:

1. An organization of production workers.
2. A heterogeneous organization of professional and nonprofessional employees.
3. An organization of engineers.
4. An association of engineers and employees in closely related professions such as chemists, physicists, and so forth.
5. An organization of all professional employees.

In the opinion of the committee the first of these possibilities is definitely unsuited to the needs of the engineers. Acceptance of the second would depend upon the history and status of industrial relations in the company, the wishes of the employees, the attitude and integrity of management, and the economic position of the company in the industry. The remaining three possibilities are all suitable forms of labor organizations for engineers.

The inclusion of all employees engaged in professional work in a single bargaining agency would make for a larger membership, which in turn would give the agency more prestige whether it becomes associated with one of the national federations of labor organizations or operates as an independent organization. Such an association, when organized on a national basis, would have a substantial treasury which would enable it to engage organizers, retain a research staff, and maintain competent officers and counsel. On the other hand, the more restricted the bargaining agency the greater the community of interest among the members and the easier the task of administration. Internal conflicts of interest would be less likely to arise and objectives and programs could be developed more easily, but external conflicts, such as jurisdictional disputes, would be more likely to occur. Moreover, restricted organizations add to the difficulties of maintaining mutually satisfactory industrial relations, and many separate bargaining agencies not only are time consuming but also complicate the collective-bargaining process.

Engineers Should Choose Form of Organization

The committee believes that the choice of the form of organization should be left to the engineers and their associates engaged in professional work. It recognizes that the appropriate bargaining agency may well differ from establishment to establishment. It wishes to point out, however, that the Institute may quite properly advocate and urge on its employee members that in all cases before the National Labor Relations Board they ask for any one of the last three forms of organizations, namely, an association for engineers alone, an association for engineers and their associates in closely related professions, or an association of all employees engaged in professional work.

A statement addressed to its members pointing out the form of organization which it believes to be in the best interests of the engineer is quite in order and would not be detrimental to the Institute or its members. The foregoing, however, would not be a proper argument for the Institute to make directly to the National Labor Relations Board in an individual dispute case, because in such cases the Board is concerned only with the wishes of the employees and the enforcement of the Act.

Include Junior Engineers

Where a bargaining agency for professional employees exists or is being formed, the committee believes that every effort should be made to include junior engineers. If young engineers are left out of the professional unit and included in a nonprofessional unit in which they happen to be working temporarily, their interests will not be fully protected. It should be noted that this arrangement has precedent. For example, a pattern maker who is temporarily assigned to work with production employees usually is excluded from the bargaining unit of production workers and retained in the unit of the pattern workers, most of whom ordinarily work in a separate pattern shop.

If young engineers are included in a bargaining unit of production workers in which they happen to be working temporarily, they may be brought under a closed-shop or a union-shop arrangement which might give rise to misunderstandings and irritation when they desired to move up to their regular professional positions. Moreover, they may want to belong to a professional organization during the time they are temporarily assigned to nonprofessional work, and, if covered by a closed-shop agreement, they would have to pay dues in two labor organizations. To avoid such complications it would seem advisable to recommend to these young engineers that, whenever they deem it advisable to choose a collective-bargaining representative, they seek admission to a

group representing professional employees.

Collective Bargaining and the Professional Employee

In January 1944 the board of directors of the AIEE authorized the appointment of a committee to study and report on collective bargaining and related matters. At about the same time some discussions were started leading to the establishment in July 1944 of a joint committee of three of the professional engineering societies. This committee's function is also that of a study or survey group, and it became the Joint Committee on the Economic Status of the Engineer. The three societies participating in the joint activity are the American Society of Civil Engineers, the American Society of Mechanical Engineers, and the AIEE. The American Insitute of Mining and Metallurgical Engineers and the American Institute of Chemical Engineers have been invited to participate in the work of the joint committee, and, pending formal action on the part of these two societies, their representatives have been participating informally.

The scope of the survey work being undertaken by the joint committee is considerably broader than the subject of collective bargaining, but one of the survey groups set up by the joint committee is a committee on collective bargaining by engineers in professional criticism of all engineers doing prowork.

The recommendations of the report of the AIEE committee on collective bargaining and related matters were approved tentatively by the AIEE board of directors at its meeting on May 29, 1945, pending further consideration by the membership as a whole, and the report, including its recommendations on policy, now is being studied by the Joint Committee on the Economic Status of the Engineer.

To facilitate the cooperative work of the Joint Committee on the Economic Status of the Engineer, that committee has recommended that the tentative report of the AIEE committee on collective bargaining and related matters be published promptly not only in Electrical Engineering, but also in the monthly publications of the other professional engineering societies. This is intended to give the joint committee the benefit of the comments and fessional work rather than only those of readers of Electrical Engineering.

Your criticism and comments are earnestly solicited. These should be sent promptly to:
Mr. E. P. Yerkes
Bell Telephone Company of Pennsylvania
1835 *Arch Street*
Philadelphia 3, Pa.

(*In writing please indicate the professional engineering society or societies to which you belong.*)

Recommendations

The committee on collective bargaining and related matters recommends that the American Institute of Electrical Engineers adopt the following tentative policy:

1. Prepare a manual for members presenting the essential facts about the American Labor movement and the National Labor Relations Act (Wagner Act) and setting forth (1) what the Institute may and may not do and (2) the courses of action that are open to its members.

2. Seek the establishment of a joint committee composed of representatives of the various engineering societies which would serve as a clearing center for these associations and, in those cases in which two or more societies desire and have the right to intervene as a friend of the court on behalf of their members, make arrangements for a common counsel.

Note. The committee has been informed that the Institute generally will have little opportunity to intervene as a friend of the court in labor cases involving engineers. It believes, however, that such action may be both possible and desirable in certain circumstances. A joint committee would enable each society to join with other engineering societies, to act alone, or to refrain from any action depending upon the issues and circumstances in a given case.

3. Establish a continuing committee on collective bargaining and related matters in order that the Institute may be kept informed about new developments concerning unionization and collective bargaining.

4. Refrain from establishing collective-bargaining agencies for engineers which are directly or indirectly associated with the Institute or its Sections, and from assisting in any way in the actual formation or administration of a labor organization for engineers.

Appendix I. Glossary

Employer as defined in the National Labor Relations Act "includes any person acting in the interest of an employer, directly or indirectly, but shall not include the United States, or any state or political subdivision thereof, or any person subject to the Railway Labor Act, as amended from time to time, or any labor organization (other than when acting as an employer), or anyone acting in the capacity of officer or agent of such labor organization." (Section 2(2).)

Employee as defined in the Act includes "any employee, and shall not be limited to the employees of a particular employer, unless the act explicitly states otherwise, and shall include any individual whose work has ceased as a consequence of, or in connection with, any current labor disputes or because of any unfair labor practice, and who has not obtained any other regular and substantially equivalent employment, but shall not include any individual employed as an agricultural laborer, or in domestic service of any family or person at his home, or any individual employed by his parent or spouse." (Section 2(3).)

Representative as defined in the Act may be "any individual or labor organization." (Section 2(4).)

Labor Organization as defined in the Act "means any organization of any kind, or any agency or employee representation committee or plan, in which employees participate and which exists for the purpose, in whole or in part, of dealing with employers concerning grievances, labor disputes, wages, rates of pay, hours of employment, or conditions of work." The Board, in accordance with the purpose of the Act (specifically Section 8(2)) has refused to certify unions initiated, aided or dominated by employers.

Bargaining Unit comprises those classifications of employees that are (*a*) to be included for the purpose of collective bargaining and (*b*) to be covered by the wage contract. The definition may specify the classification to be included or it may list those to be excluded. It may be a craft, plant, company or a subdivision thereof. (Section 9(*b*).) It is important to note that the Board makes a distinction between the bargaining unit and the labor organization of employees. The Board is not concerned with the composition of the organization so long as it is free from employer domination. Its membership may be less inclusive, more inclusive or co-extensive with the bargaining unit. A labor organization of professional employees, for example, could admit to membership young engineers, professional employees temporarily engaged in nonprofessional work, and employees whose work is of a semi-professional nature. It might not, however, be certified by the Board as the bargaining agency for any of these special classification. In making its decision as to what the bargaining unit shall be, the Board strives to bring together in one single unit those employees who have a community of interest which is likely to further harmonious organization and facilitate the objectives of collective bargaining.

Majority-Rule Principle means that where a union is designated by the majority of the voting employees in a gargaining unit, it automatically becomes the sole bargaining agent for all employees (nonmembers as well as members) in the unit.

Union Status is the basic relationship which

(*Continued on Page* 30)

Book Reviews

GLYCERIN, ITS INDUSTRIAL AND COMMERCIAL APPLICATIONS

By Georgia Leffingwell and M. A. Lesser

Since its discovery in the 18th century, glycerin has found its way into a great many industries. This book is a comprehensive survey of the large number of industrial products which contain glycerin in smaller or larger quantities. Each chapter covers the use of glycerin in a particular branch of industry, and contains a discussion of the properties of glycerin which render it useful for the particular industry covered in the chapter. This will enable those engaged in a particular industry to ascertain how glycerin can be used for obtaining or improving their products.

The general discussion is followed by a wealth of formulae carefully selected from the authors' many years of experience in the preparation of glycerin-containing industrial products. Attention is called to the distinctive qualities of the various formulae and the uses to which they are applied.

302 pages, Cloth, 5¾ x 8¾.....$5.00
CHEMICAL PUBLISHING COMPANY, INC.

THE ART OF BUILDING CITIES

By Camillo Sitte

So completely and modern in its approach to the problem of urban planning is this historic book that its first appearance in English will be cordially welcomed by city planners and architects throughout the English speaking world. This is a doubly significant moment for its publication: the growing surge of interest in slum clearance and general reconstruction of cities in this country, to provide more hygienic as well as more artistically living conditions, together with the staggering problem of rebuilding English and continental cities ravaged by bombing make a widespread knowledge of sound planning principles a vital necessity.

Originally published in Vienna in 1889, this volume went through several German editions, and was also translated into French. The original illustrations are reproduced in the English translation, and the translator has sought earnestly to retain the flavor and original spirit of the author's words.

130 pages, Cloth, 8½x9¼, Illustrated, $5.50
REINHOLD PUBLISHING CORPORATION

THE BUILDERS OF THE BRIDGE

By Dr. David B. Steinman

Dr. Steinman is well known to Professional Engineers and architects everywhere. His early and very effective labors in giving the National Society of Professional Engineers its start on a sound organizational basis, has been an inspiration to those who later have carried forward this work.

It is doubtful if any recent publication on any phase of either engineering or architecture has been so widely and enthusiastically praised as has "The Builders of the Bridge," from the pen of Dr. Steinman. Engineers and architects have written from all parts of the world, expressing such sentiments as, "This book gives me a feeling of pride in my profession;" "He has presented us with a magnificent instrument to advance the profession;" "This book is a masterpiece, with a fascinating and dramatic story;" "I believe the book is one of the finest ever written on engineering accomplishments."

In this truly historic work Dr. Steinman has traced with consummate skill and thoroughness, the evolution of the art and science of bridge building and bridge design to the point where real beauty is secured in the modern bridge structure, without sacrificing either utility or economy. Strength, utility and beauty must and can be combined, Dr. Steinman insists, and his story of the history of bridge building provides many striking examples.

Early bridges were primarily and dominantly utilitarian. The old time railroad bridges and other strictly "practical" structures were usually of clumsy proportions with awkward angularity of lines. They were tolerated in the past because they were thought to be unavoidable as part of "this ugly civilization." Architects regarded steel as a material devoid of artistic potentialities—something to be concealed or covered in arch design.

This book is filled with beautiful illustrations depicting the rise of the bridge builders art, and especially the development of the concept of beauty in modern bridge design.

457 pages, Cloth, 5½x8¼, Illustrated, $3.50
HARCOURT-BRACE COMPANY

AMERICAN CHEMICAL INDUSTRY

By Williams Haynes

The first two volumes of this monumental work, the result of years of exacting research, which traces the development of chemical manufacturing in this country, describes processes and products, and interprets their influence upon the industry and their importance to society. The six volumes, of which the completed work will consist, will form a fully documented record of the chemical industry from the earliest Colonial Times to the outbreak of the Second World War. Volume 1, titled "Backgrounds and Beginnings," covers the period 1609-1910; Volume 2 and Volume 3, titled "The World War I Period" cover the years 1912-1922; Volume 4 is devoted to "The Merger Era" 1925-1929; Volume 5, "A Decade of New Products," covers the years 1930-1939; and Volume 6 will be devoted to the "Histories of the Companies."

Volumes 2 and 3 are now available and the remaining volumes, 1, 4, 5, and 6, are to be published at intervals during the next two years. With the publication of all the volumes, there will be available for the first time a complete history of the American chemical industry, covering the entire scope of the industry, including not only the heavy chemical and dyestuff industries but the entire range of chemical manufacturing from dry colors, paints and pigments, to fertilizers.

Vol. 2 440 pages, Cloth, 7x9¾ Illus., $8.00
Vol. 3 606 pages, Cloth, 7x9¾, Illus., $8.00
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Requests for further information concerning any item mentioned under this heading will be promptly referred to the manufacturer. It would be appreciated if inquiries be addressed on professional or company letterhead.

Send Inquiries Direct to American Engineer, #6 Church Street, New York, N. Y.

RUBBER BASE FLOOR PAINT

Perhaps the most significant progress in the production of more durable floor coatings was made a few years before World War II started, with the development of chlorinated rubber for use as a paint vehicle. Up to that time no paint had been completely successful in withstanding the action of lime and moisture in concrete. Lime is present in every concrete surface. It is a basic element of Portland cement. Lime is also present in some types of brick and in the mortar used for cementing the brick. The lime itself is harmless enough until contact with moisture. Moisture and lime are very active chemically and have, therefore, usually contrived to ruin paint, especially paint on grade or below-grade, cement floors.

Consequently the substitution of a rubber type base in paint instead of the customary oleo-resinous base was quite a revolutionary step. Vegetable oils react with lime and moisture forming a soapy mess. Rubber resin in paint does not form a soap with lime. For this reason this Rubber Base Floor Paint represents a great advance in the concrete floor paint field. It is now possible to paint concrete basement or outdoor porch floors without the hazard of the paint immediately powdering off. This Rubber Base Paint is also very effective in protecting iron and steel from rusting.

For further information address American Engineer, reference No. 467.

A NEW SEALANT

A sealant, in powder form, that is mixed with water to a putty consistency before using is now available. Held against a leak it sets hard in 3 to 5 minutes—even under water and against water pressure. It is used to stop running water or seepage through holes or cracks in basement walls or floors—elevator pits, concrete tanks or any underground masonry subjected to either mild or severe active water pressure. It is also used for anchoring or tightening bolts in concrete walls and floors and to stop leakage at juncture of walls and floors.

For further information address American Engineer, reference No. 468.

NON-CORROSIVE RUST REMOVER

A new Rust Remover has been perfected and a new plant set up for its manufacture. War-born research helped company chemists to develop successfully a product scientifically compounded to (1) wet metal thoroughly, (2) dissolve rust scale rapidly, (3) remove it completely, and (4) be relatively non-corrosive to steel even under conditions of long exposure.

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This new Rust Remover can be applied by usual methods such as brush, spray, and dip, but its long life and rapid action in otherwise inaccessible crevices make dipping the most economic wherever practical. Other uses, as widespread as rust itself, included rust removal from castings, steel stock, fabricated parts, hand tools, periodically idle farm and process equipment, sporting goods from guns to golf clubs, and government surplus items exposed to weathering during storage. It is available in pint to tankcar quantities.

For further information address American Engineer, reference No. 469.

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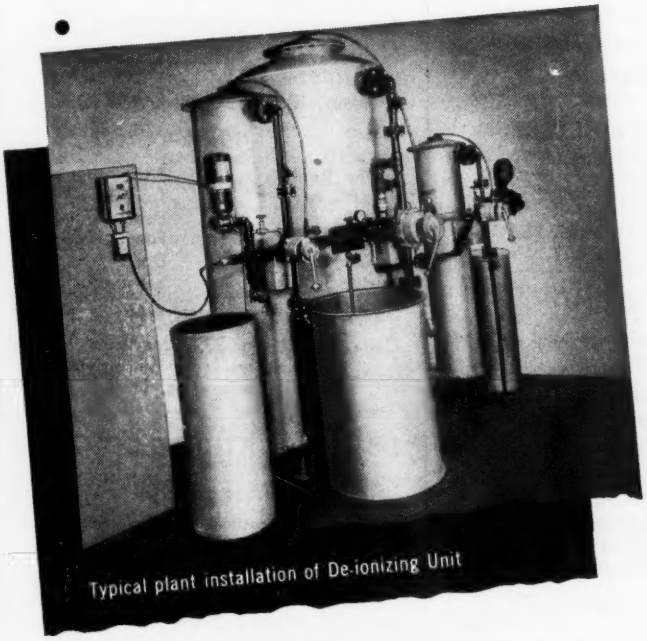

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The New York County Chapter reports a continued increase in membership.

At the regular monthly meeting in January, David B. Steinman gave an exceptionally interesting talk on "Beauty in the Bridges". Engineer Steinman is a past president of the National Society and the New York State Society of Professional Engineers and is a member of the New York County Chapter. The February 7th meeting was devoted entirely to Chapter business.

Visiting Professional Engineers, who may be in New York are cordially invited to meet with them at their March 7th meeting in the Chapter Club Rooms, 2 Park Avenue (at East 32nd Street) 26th floor, New York City at 7:30 P.M. Meetings are usually held on the first Thursday of each month, beginning with a dinner at 6:30 P.M. in a room adjacent to the Club Rooms for those who desire it. Introduce yourself. We shall be expecting you.

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(*Continued from Page* 22)

when Japan first invaded Manchuria. We didn't do much about the Pearl Harbors of Ethiopia, Austria, Czechoslovakia and all the others, up to and including that of Poland. We didn't get excited about "remember Pearl Harbor" *until it become our turn.* We had plenty of warning, but for business or other reasons, we "believed what we wanted to believe," until the blow finally struck in our own back yard.

The Worm's-Eye View

That point of view is popular among the thoughtful news-gatherers in Washington. They have indicated little personal interest in the investigation of Pearl Harbor, believing that some politicians are much more interested in finding a goat on which the blame for the war can be placed, than they are interested in preventing the rise of situations which right now may be making World War III inevitable. Newsmen, especially those that write for conservative publications very often hold opinions quite inconsistent with those contained in the copy they turn in for publication.

(*Continued from Page* 26)

prevails between the union and the employer under a wage contract. It is a matter of great importance to both the union and management. The more common types of union—management relationships are:

Closed Shop. An arrangement under which (*a*) all employees in the *bargaining unit* are required to belong to the union as a condition of employment and (*b*) the employer agrees to hire only union members (sometimes also to hire only through the union) so long as the union is able to supply needed employees.

Union Shop. An arrangement under which the employer may hire new employees from any source but said employees must become members of the union, usually after a specified trial period.

Preferential Shop. An arrangement under which union members are given special consideration in certain aspects of employment, most commonly in lay-offs and rehiring and sometimes in hiring and promotion.

Maintenance of Membership. An arrangement which does not require any employee to join the union, but which requires those employees who were members when the contract was signed and who failed to resign during the "escape period" (usually 15 days) as well as those who later joined the union, to continue as members during the life of the agreement.

Sole Bargaining Agent. An arrangement under which the union is recognized as the only bargaining agency for all the employees in the unit. Under this type of union-management relations employees may either join or refrain from joining the bargaining agency.

References

1. Eighth Annual Report of the National Labor Relations Board, 1943 (fiscal year). United States Government Printing Office, Washington, D. C. Page 53.
2. Executive Administration . . . Salesmen Redefined. Report of the Wage and Hour Division of the United States Department of Labor, October 20, 1940. United States Government Printing Office, Washington, D. C.

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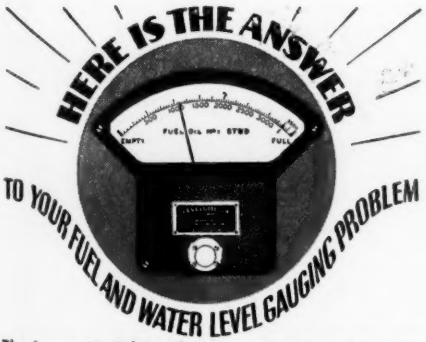
AIRPORT DESIGN

A project study entitled "Looking Ahead to the Airport Center of Tomorrow" has just come off the press. The purpose of this study is to present the case for central heating at a modern airport center and to demonstrate how the application of this principle can affect the entire conception of airport design. It deals with a hypothetical airport designed to serve the hundreds of medium and smaller sized cities in the country, which at present do not have within themselves the population to support their own terminals for scheduled airline stops, but considered on a regional basis, they could be grouped so that combined populations would justify them.

The thought is developed that this airport center strategically located on super highways and central to a number of municipalities could logically support retail establishments, amusement places, hotels, residences, manufacturing and warehousing activities.

Detailed information consisting of photograph illustrations, blue prints, cost data, etc., is presented to show that such a project is economically feasible. Nationally known experts on airport planning and engineering have collaborated to assemble the material contained in the study. Major Jack Berry, Commissioner of the Cleveland Municipal Airport has written the preface. Copies of the book are available to anyone interested in airport planning.

For further information address American Engineer, reference No. 471.



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The gauges may be installed on tanks located either above or below ground and are made with either vertical or horizontal type dials. Models are available with either 6" or 12" dials, the selection of which depends upon the desired number of dial graduations. The 6" type provides a dial large enough to permit as many as 200 graduations although not more than 125 are recommended, while the 12" type can provide as many as 400 graduations although a maximum of 250 is recommended for easy reading.

A 4-page bulletin describing and illustrating these gauges is available.

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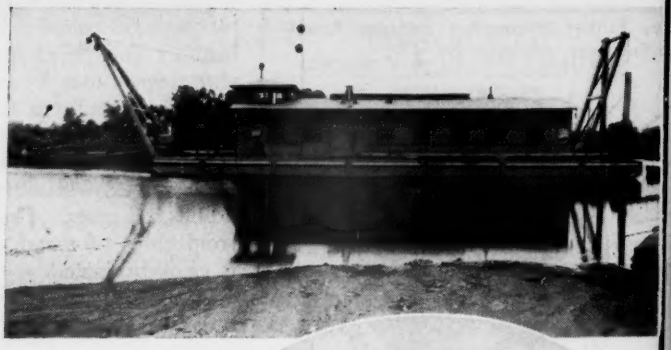

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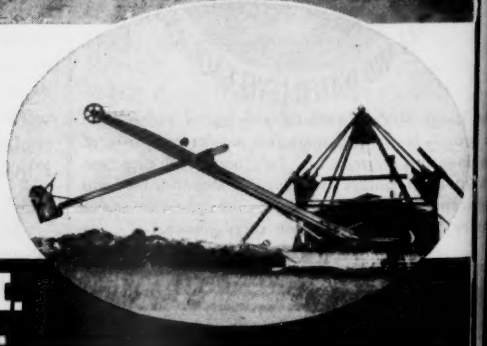

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